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Description of Gas Piping in the Bay Ridge High School, Brooklyn, N. Y.

[Communicated by MR. HAROLD L. ALT.]

Another one of the recently completed buildings in New York city, in which gas is utilized to a considerable extent, not only for lighting, but for other purposes as well, is the Bay Ridge High School, located on Fourth avenue, between 67th street and Senator street, Borough of Brooklyn. This school is equipped with kitchen and lunch rooms, cooking rooms, domestic science rooms and physics laboratory, in all of which gas plays a most important part. The gas supply is brought in from the street and connected to four separate gas meters, as shown in the Basement Plan, Fig. 1. One meter carries the supply for laboratory use, one the supply to the ranges and stoves in the cooking rooms, one the lighting supply; and the fourth, the gas for kitchen use.

To a great extent, and in so far as possible, all horizontal gas piping was run in the basement, and vertical risers were run up separately for the assembly rooms, corridors, class rooms, teachers' rooms, laboratories, kitchen, cooking room and pupils' stairs. This is owing to the fact that it had been found that the horizontal gas pipes previously run and buried in cinder concrete had been severely affected by the action of sulphur fumes formed by the cinders, so that it was endeavored in this installation to avoid all horizontal runs above the basement floor as far as conditions permitted, and where it was absolutely necessary to bury the piping in the floor it was covered with a heavy coat of asphalt. In passing through the floors the risers are protected by metal sleeves.

For the ceiling outlets ½-inch pipe is used, going 2 inches below the ceiling or the hub of the centerpiece. The outlets for the brackets in the students' lavatories are 7 feet above the floor; in the teachers' closets, 6 feet 6 inches above the floor, and in all other cases (as a general thing) about 7 feet. The brackets are provided with lug-ell or lug-tee connections, which are secured to the brick walls with expansion bolts and to terracotta partitions with toggle bolts. Wherever the gas brackets on the stairways appear opposite a glass panel of the stair inclosure they are supported by a 1½-inch by 3/16 inch steel flat, placed across the panel, and to which the bracket is secured, the flat being held by two ⅜-inch tap-screws at each end, which set into the upright iron bars of the panels.

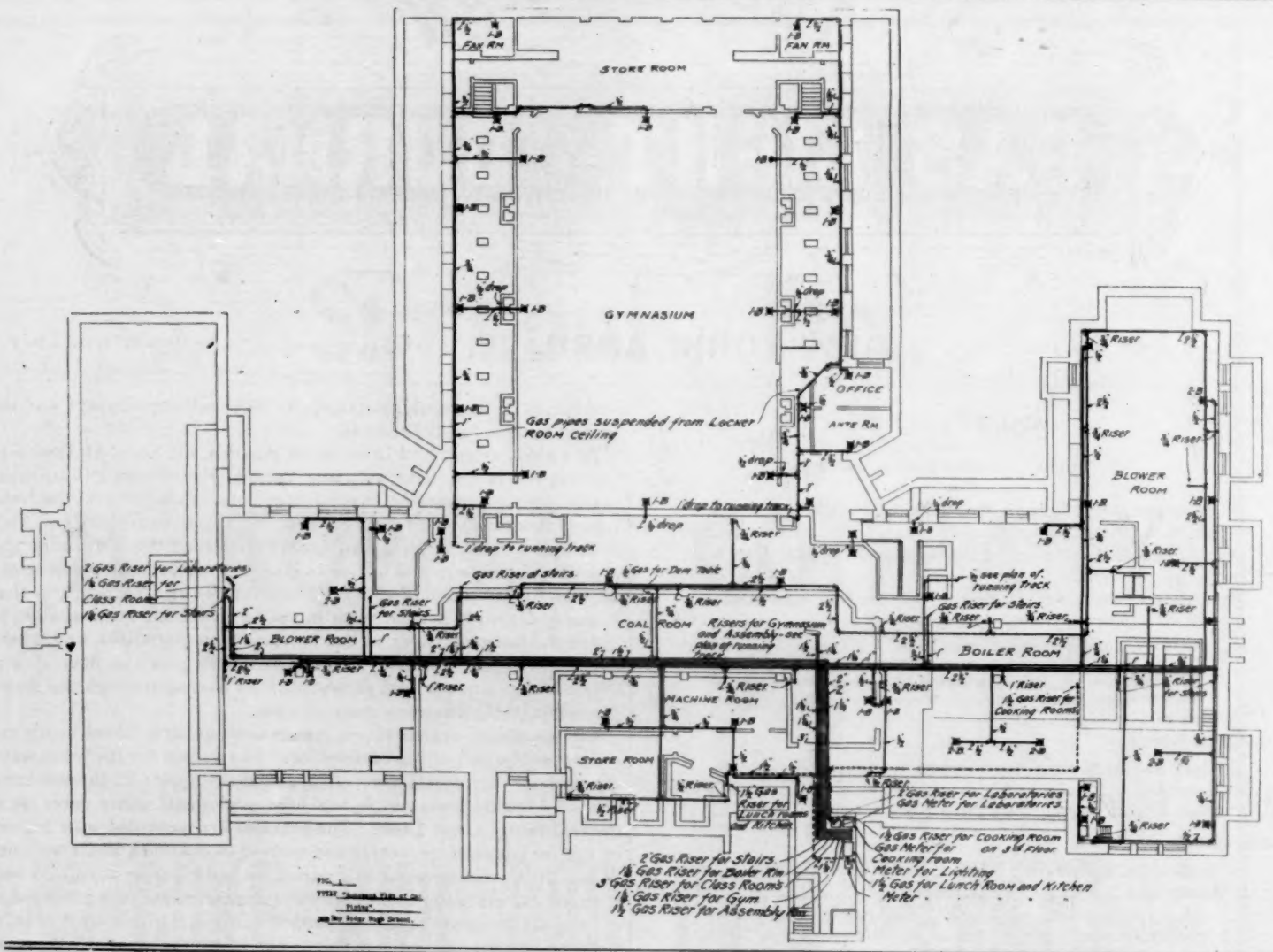
All the distributing pipes are suspended from the ceiling of the basement or cellar, except the corridor gas supplies, which are placed on top of the floor or roof beams. Bent pipes are used for all drops, and the connections of the branches with the mains are made with malleable iron, right-and-left couplings. The pipe used throughout is of the best quality, wrought iron, galvanized on the outside only, with heavy, malleable iron beaded fittings, which are also galvanized. Where pipes of different sizes connect, the required reducing fittings are used, as no bushings were permitted, and wherever possible, Y's and 40° elbows are used in place of the straight tee connections.

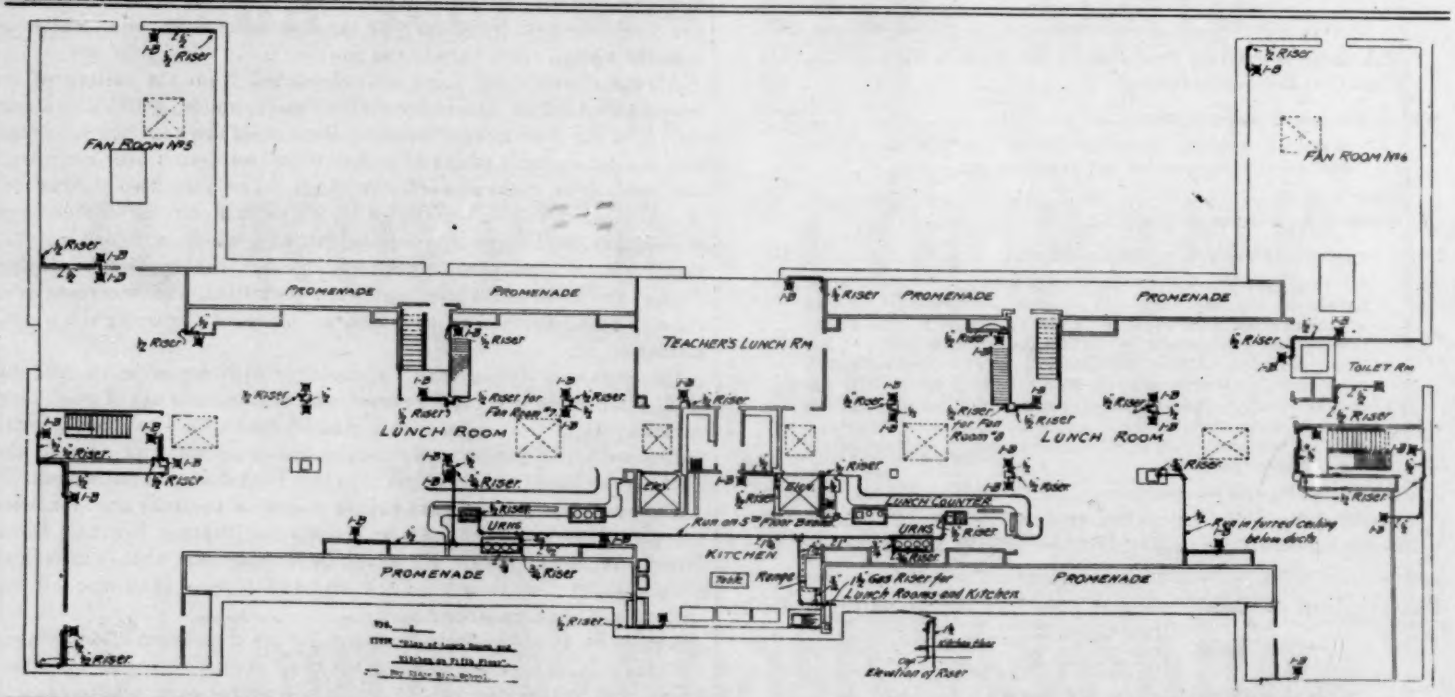
The pipe and fittings are put together with screw-joints and red lead, after being carefully reamed and without the use of gasfitters' cement. In a few cases, where heat ducts happen to come directly underneath the gas drop lights, the gas pipe was run around the duct, as the locating of any gas pipe in a heat duct was not permitted.

The risers have brass gate valves placed in the base and, on those for the class rooms, have the outlets for the gas brackets taken directly from the riser. No gas pipe is made less than ¼ inch, and all the short branches of ¼ inch and ⅜ inch pipes (and also all the outlets) are of extra strong pipe.

Service cocks are installed controlling the class room risers, which are heavy brass lock service gas cocks of the same size as the riser. Brass gate valves are placed, so as to control each section, and a special valve is used for the assembly rooms. The gas valves throughout the building are tagged with metal tags, for which a directory is provided, which is framed and hung near the gas meters.

For the gas stoves and ranges in the domestic science room on the third floor, a separate 1¼-inch rising line is extended from the basement, direct to the cooking room, with branch supplies to the stoves and ranges having gate valves at the ranges. On this line connection is made below the flooring of the third floor with a tee branch and ¼-inch wrought iron pipe, which is extended to a point under the students' table, and then run around under the tables supplying

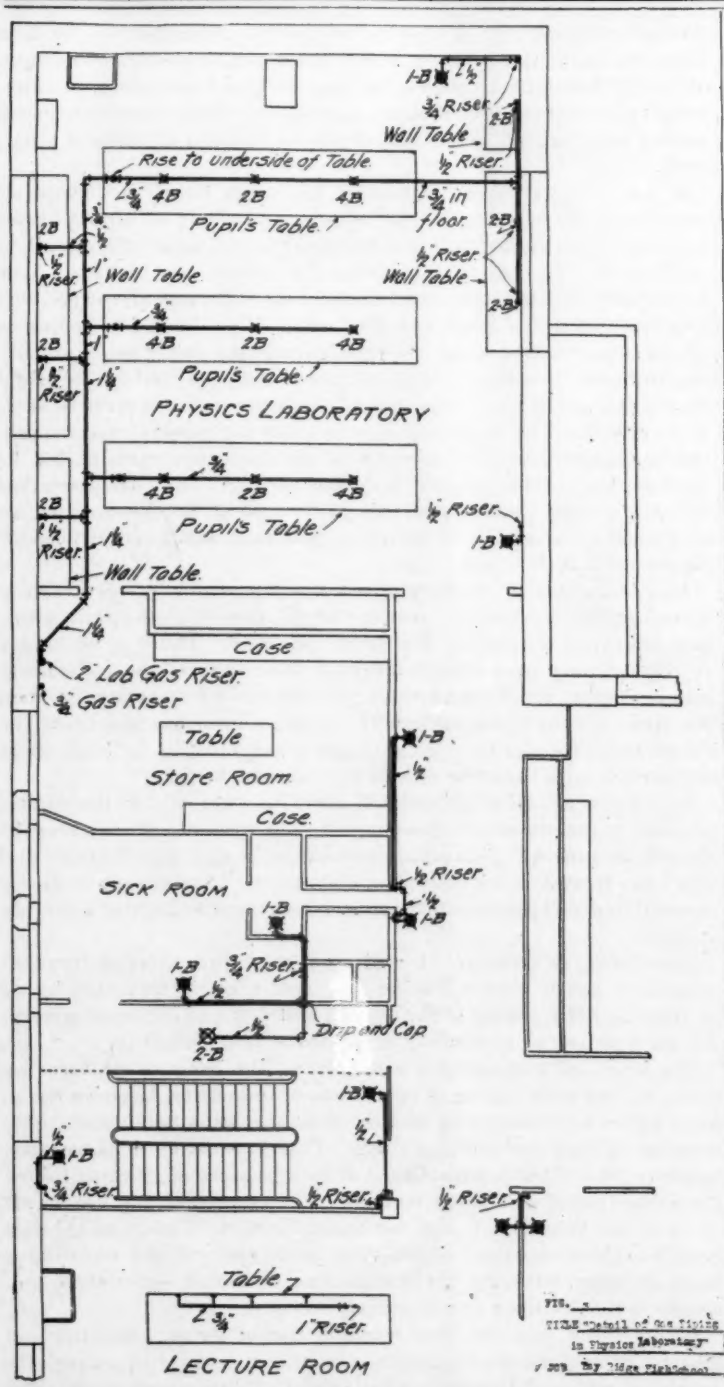

STORE ROOM
FAN RM
FAN RM
GYMNASIUM
OFFICE
ANTE RM
Gas pipes suspended from Locker ROOM ceiling
1" drop to running track
2½ drop
Gas Riser at stairs
Gas for Dem Tank
Gas Riser for Stairs
COAL ROOM
Risers for Gymnasium and Assembly—see plan of running track
BLOWER ROOM
BOILER ROOM
BLOWER ROOM
MACHINE ROOM
STORE ROOM
1½ Gas Riser for Lunch Rooms and Kitchen
2 Gas Riser for Laboratories
Gas Meter for Laboratories
1½ Gas Riser for Cooking Room on 3rd Floor
Gas Meter for Cooking Room
Meter for Lighting
1½ Gas for Lunch Room and Kitchen
Meter
2 Gas Riser for Stairs
1½ Gas Riser for Boiler Rm
3 Gas Riser for Class Rooms
1½ Gas Riser for Gym
1½ Gas Riser for Assembly
2 Gas Riser for Laboratories
1½ Gas Riser for Class Rooms
1½ Gas Riser for Stairs
1½ Gas Riser for Cooking Rooms
see plan of running track

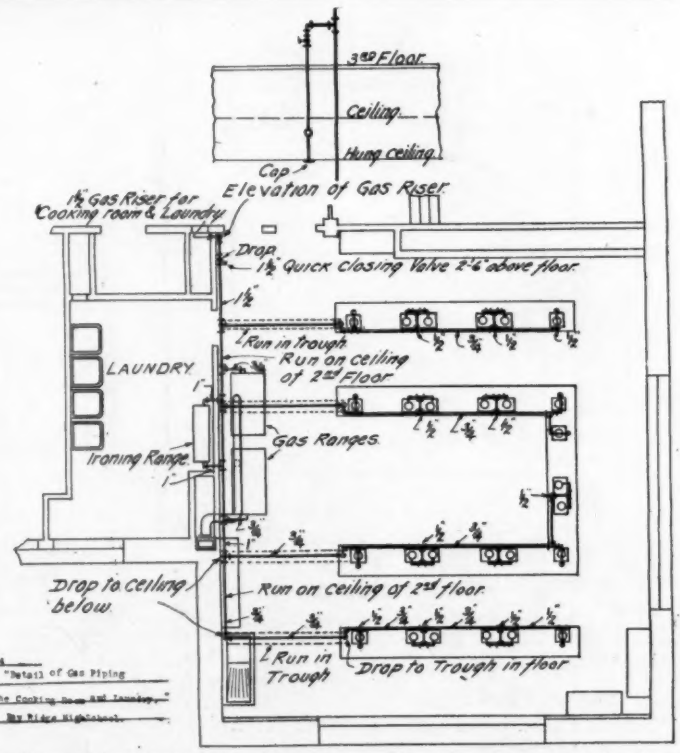


¾-inch risers with composition sliding stem and lever gate valves on same; ¾-inch running lines are carried around under the projection of the table top on which are placed ¾ by ½-inch fittings, and pipes terminated for double outlets with female, brass hose cocks. A complete layout of this room, together with the laundry, is shown in Fig. 4.

The gas stoves used in the cooking tables are of the nickel plated single and double-burner type, the branch supply pipe to the hot plates having brass needle valves with air chambers. The gas ranges are similar to the No. A-381 "Jewel," with broiling oven reflectors for oven and supplied with gas through ¾ inch con ections. Vent connections are also placed on these stoves made of Russia iron pipe fittings, with dampers, the vents being run into a flue provided for the purpose. Quick closing valves are placed on the main branches to the stoves in the domestic science room.

The laundry stoves are of the gas laundry, iron-heater type, 48 inches long by 12 inches wide, and 26 inches high, accommodating eight large irons supported on 1½-inch angle standards, with an in-





drop-hinged brackets with the most up-to-date pattern of latches. Supplied with this gas range are 5 feet heavy, wrought steel, double-plate shelves, measuring 13 inches wide and 28 inches high, which are set on suitable wrought iron brackets, bolted to the top of the range at the back. These shelves are bound and braced all along with 1¼-inch by ¼-inch highly polished bar steel bands, matching the trimmings of the range. Above the range is set a heavy, japanned, wrought steel hood, 5 feet 6 inches long, 4 feet wide and 2 feet 5 inches high, which is connected to a flue. This hood is bound and braced all around at the bottom with 3 inch by ¼-inch bar steel bands, and is secured to the wall, while its weight is carried by wrought iron hangers from the ceiling.

The fume hoods over the laboratory sinks, etc., have two-way, brass, pillar cocks on the backs, with aluminum tips for gas; also, bunsen burners in the fume hood vents.

The gas outlets under the laboratories, the tables in the laboratories' rooms, the chemical preparation room and in the box on the stage, are run along the underside of the table tops, and terminated with either 2-way or 4-way brass pillar body cocks, or needle valves with hose ends, the needle valves having wood handles. All of the outlets of each table are provided with brass gate valves in the closet of the table. The gas piping, fittings, etc., of the work tables and physics laboratory demonstration tables are entirely of brass above the floor, an insulating joint being placed at the point where the iron and brass pipes connect at the floor. A layout of the piping in the gymnasium is shown in Fig. 5.

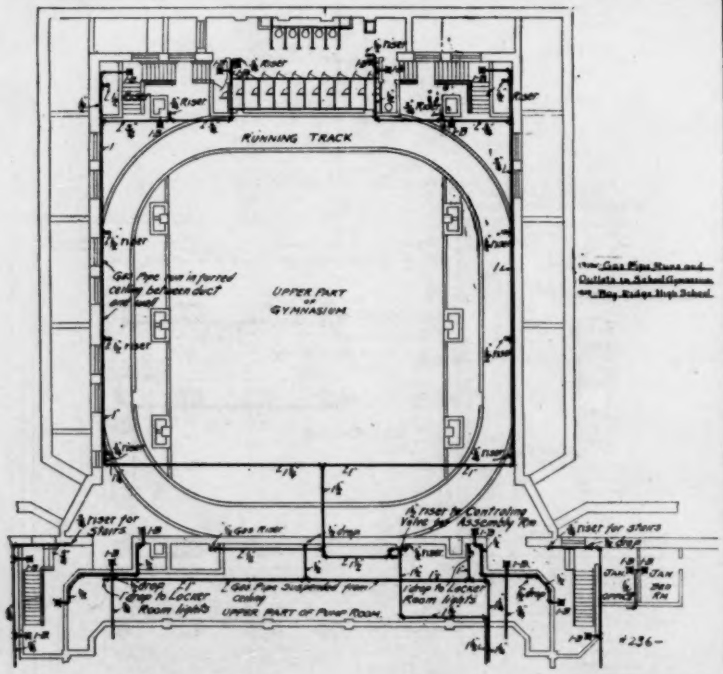
The extent to which the gas stoves, gas ranges, urns, etc., are installed in this school, brings forcibly to mind the fact that, during the last year (that is to say, 1912) the number of lineal feet of hotel gas ranges installed in hotel, restaurant and club kitchens in the city of New York was equivalent to 12 of the city blocks, if placed end-to-end. No better testimonial than this can be offered as to the value and convenience of gas for cooking purposes, it being a well-known fact that New York boasts of having the best chefs in the world.

The gas outlets installed are located in the following positions and are of the numbers specified:

	No. Burners.
Basement:	
Boiler room, blower room, etc	35
Gymnasium, locker room, etc	22
Staircases	6
Running Track Level:	
Staircases	11
Upper part of gymnasium	6
First Floor:	
Class rooms, etc	31
Corridors	21
Staircases	18
Assembly room, vestibules	38
Tables	4

termediate shelf of ¼ inch steel. Gas is supplied to these stoves through 1 inch nickel-plated, iron gas pipe, the burners having needle valves, and 1 inch brass gate valves are placed in the main supply.

The urns in the lunch room on the fifth story (of which a complete layout is shown in Fig. 2), have a supply of ¾ inch in size, with a brass gate valve, extended from the kitchen rising line; No. 3 "Eclipse" burners are provided for the coffee, tea and cocoa urns and a horseshoe burner for the water urn; the supply to each urn is, of course, valved separately. For the "*bains marie*" in the lunch room ½ inch branch supplies are provided with a No. 3 "Eclipse" burner under each, controlled by a brass gate valve. In the lunch room kitchen is set a 5 feet improved French Imperial gas cooking range, 34 inches deep and 31 inches high, containing 2 ovens, one for baking and roasting, with fire tile platforms underneath, to distribute the heat evenly, with one oven also having a full complement of top cooking burners covered with a fireproof, reflecting-block, throwing a downward flame for broiling, and with a sliding gridiron and wrought iron drip pan. The top of the range has a full set of top cooking burners, covered with a heavy, wrought iron, removable grating for broiling, stewing, frying and the like. The body of the range is constructed of No. 16, U. S. gauge, box annealed, sheet steel, riveted and bolted together; the bottom of the range is bound and braced all around with a 3-inch by ¼-inch steel bar, band riveted and bolted; the front of the range has polished steel trimmings, 1¼-inch by ¼-inch, the oven doors being equipped with improved heavy,



	No. Burners.
Second Floor :	
Class rooms	56
Corridors	19
Staircases	18
Work tables, benches, etc	22
Third Floor :	
Class rooms, etc	37
Corridors	17
Staircases	18
Tables for physic classes, fume hoods, etc	53
Tables for cooking classes	27
Fourth Floor :	
Class rooms	36
Corridors	16
Staircases	16
Pupils' worktable, fume hoods, etc	54
Fifth Floor :	
Rooms, kitchens, etc	34
Staircases	8
Urn stands	8[1]
Bainmaries	2[2]

Accounting Under Utility Regulation.

[A Lecture delivered by MR. JOHN A. BRITTON, before the Students in the Gas Engineering Course, University of California.]

I have been asked to speak on the subject of accounting as directly applied to gas engineering. At the outset I desire to differentiate between bookkeeping and accounting, for I would not wish for any aspiring engineer to become a mere bookkeeper, slave of the pen and pad, an imitator, or mere creature of debit and credit. But of accounting you should and must be masters, else your work will fail of its greatest worth—accuracy.

"Accurate" is defined as "An exact or careful conformity to truth, or to some standard requirement, the result of care or pains; free from failure, error or defect; exact."

This definition aptly fits the requirement of an engineer in his dealings with the world, and if employed as a guide and rule, subject always, of course, to human frailties, spells success; deviated from materially, it spells failure.

To insure accuracy, or mathematical precision, presupposes a knowledge of the equations that are the result of careful thought and keen analysis, and there is no other training of an engineer that will better fit him for the confidence of his clients and the public at large, than the superior knowledge of the classification of accounts.

The engineer of to-day is the factor in determination of the status of his client, before courts and commissions, greater than the lawyer who pleads the case. Not only must he know the engineering details and be familiar with the formulæ that sustain his reason, but he must also fully know the data that tie them into the particular part of the plant of which he has made a study. He must know its relation to the particular part of the account to which it is chargeable; he must know the particular relation, one to the other, of sources of revenue, of the differential between capital accounts and operating, maintenance, replacements, distribution, general and administrative expense, as they each and all have a part to play in his determination of proper costs.

1. Horseshoe type. 2. Eclipse.

It is only of very recent date that engineers have been compelled to acquaint themselves with the minutia and detail of account keeping, and to advise themselves of the general intricacies of corporation accounting. This has been brought about primarily by the keen supervision that the government, national, State, and all the political subdivisions of the State, exercise over all public utility bodies, in which supervision is under the regulation or the public service utility acts in force in many of the States, prescribing the method, form and manner in which the accounts of all such corporations must be kept. It is not enough for a gas engineer to know the principles of his profession, as applied to the mechanical or chemical branches, but he must be thoroughly familiar with the accounts that are prescribed for each branch, that he may, on examination of, or reporting on, an enterprise know accurately to which particular and peculiar phase of the accounts each item belongs.

This exactitude of corporation accounting, which is very rapidly becoming standardized all over the world, causes, so-to-speak, every man to express himself in the same language. There is no longer any uncertainty as to what is meant in these expressions. Formerly men in the gas world spoke many tongues and a convention of them was like unto the Tower of Babel; but experience has taught us the value of this standardization, and one plant must by its work stand comparison with the other on exactly the same basis.

Let us now consider the various divisions into which the capital invested in the plants of a gas company are divided. These may be classed as general, generating, transmission and distribution, and will be so treated in the following discussion. Illustrations as shown herewith indicate the minute detail in which these segregated accounts are kept.

Accounting in General.—I will now read you excerpts from instructions issued by the Pacific Gas and Electric Company by its accounting departments to the several districts and divisions governing the question of accounting as applied to that Company.

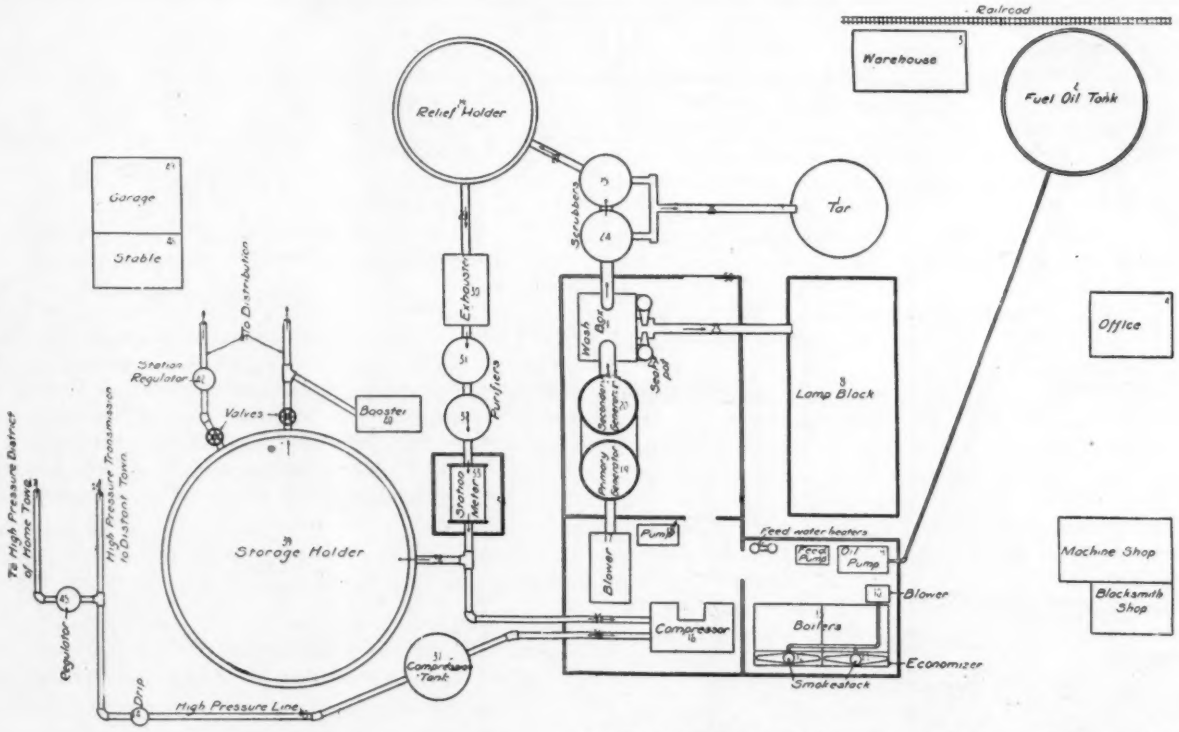
The desirability of uniform accounts, as the basis of uniform reports, for the same classes of operations of industries, has been recognized by an ever-increasing number of accountants, economists, government officials and public writers. Past experience demonstrates, however, that if this uniformity is ever to be attained, it must follow the acceptance of a common language of accounts, or the use by all of common terms, with the same significance. This is of especial benefit to the economical administration of corporations covering a large territory, enabling the comparison of varied experiences and efforts in the divisions and districts.

To open the way for this common use of terms, schedules and schemes of uniform accounts should be accompanied with a carefully developed nomenclature and definitions of all terms employed. The benefits to be derived from standardizing accounts depend upon their careful application by the people compiling the figures, and the assistance which they furnish in the economical administration of the business. The assistance which they should render is stated in the following definition of accounting:

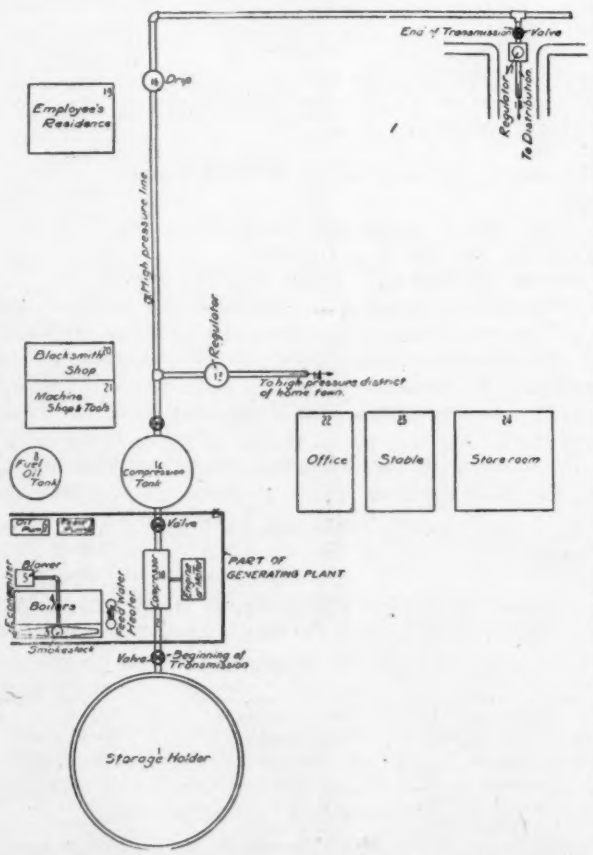
Accounting may be defined as a scientific analysis, record and summary of business transactions, or as the art of analyzing, recording and summarizing data relative to financial business, in such a manner as to disclose the condition or state of that business at any given time; to express the results or outcome of its transactions, for any given period, in terms of its objects or purposes; and to furnish all other information that such analyses record, or summarizing can furnish, for its systematic and most successful administration.

In applying the science of accounting to the successful administration of a business or enterprise for gain, such as are all public service corporations, two principal classes of accounts are always employed. The first is known as balance sheet or general ledger account, and the second as gain and loss accounts. In addition to the two principal classes of accounts mentioned above, the greater number of public and private enterprises keep additional or supplemental accounts, to aid in furnishing other information needed for their systematic and scientific administration.

These accounts of a public or private enterprise are its ledger accounts, in which are recorded the financial data which, when properly summed up on a statement generally called a balance sheet,



Details of Apparatus Used in the Generating Department of a Gas Works, Indicating the Refinements of Accounting Used.



Accounting Chart for Transmission Section.

or statement of affairs, will present a correct exhibit of its financial condition at a specified time, by setting forth the value or amount of its resources or capital; the amount of the claim of its creditors, or liabilities; and that of the equities of its proprietors, or proprietary interests.

The gain and loss accounts of a business or enterprise conducted for gain are the accounts, which, when properly summed up, disclose the results or outcome of its business operations, for a given period of time. These accounts may be called revenue and expense accounts.

Definitions.

Except where some other meaning is clearly specified in the definitions of the accounts, the following words, wherever used herein, have the meanings below stated:

Cost means cash or money cost; not price based on a term of credit.

Labor means human services of whatever character.

Cost of labor includes wages, salaries and fees, paid to persons for their services.

Cost of materials and supplies includes all specifically assignable transportation charges incurred in obtaining the delivery of such materials and supplies upon the premises of the purchaser, and the cost of any special tests made thereon prior to their acceptance; also, a suitable proportion of warehouse expenses (where the materials and supplies are passed through warehouses), and the cost of further transportation to the place of consumption, in which case a corresponding credit shall be made to the suitable expense account as herein provided.

Cost of repairs includes cost of labor expended and material consumed, less salvage, if any.

As the term is used herein, by capital of a corporation, is meant all property devoted to the tendering of the services, or the production of the commodities, which are within the purposes of such corporation.

Capital which has an expectation of life in service of more than 1 year (exception being made of hand and other small portable tools, liable to be lost or stolen, and which are not listed as to number and location), is called fixed capital.

Capital other than fixed capital is called floating capital.

Fixed capital is divisible into general capital and departmental capital, general capital being that which is indiscriminately available for the use of two or more classes of operations, while departmental capital is that assigned solely or principally to a single class of operations.

Fixed capital is also divisible into landed capital and non landed capital. Landed capital includes all interests in land (exclusive of improvements thereon), the term of which is more than 1 year. All other fixed capital is herein called non-landed capital.

Non-landed capital is divisible into intangible capital and tangible capital. Intangible capital comprises organization, franchises, patent rights, and all other intangible property within the definition of fixed non-landed capital, as above stated. Tangible capital comprises structures and equipment having an expectation of life in service of more than 1 year.

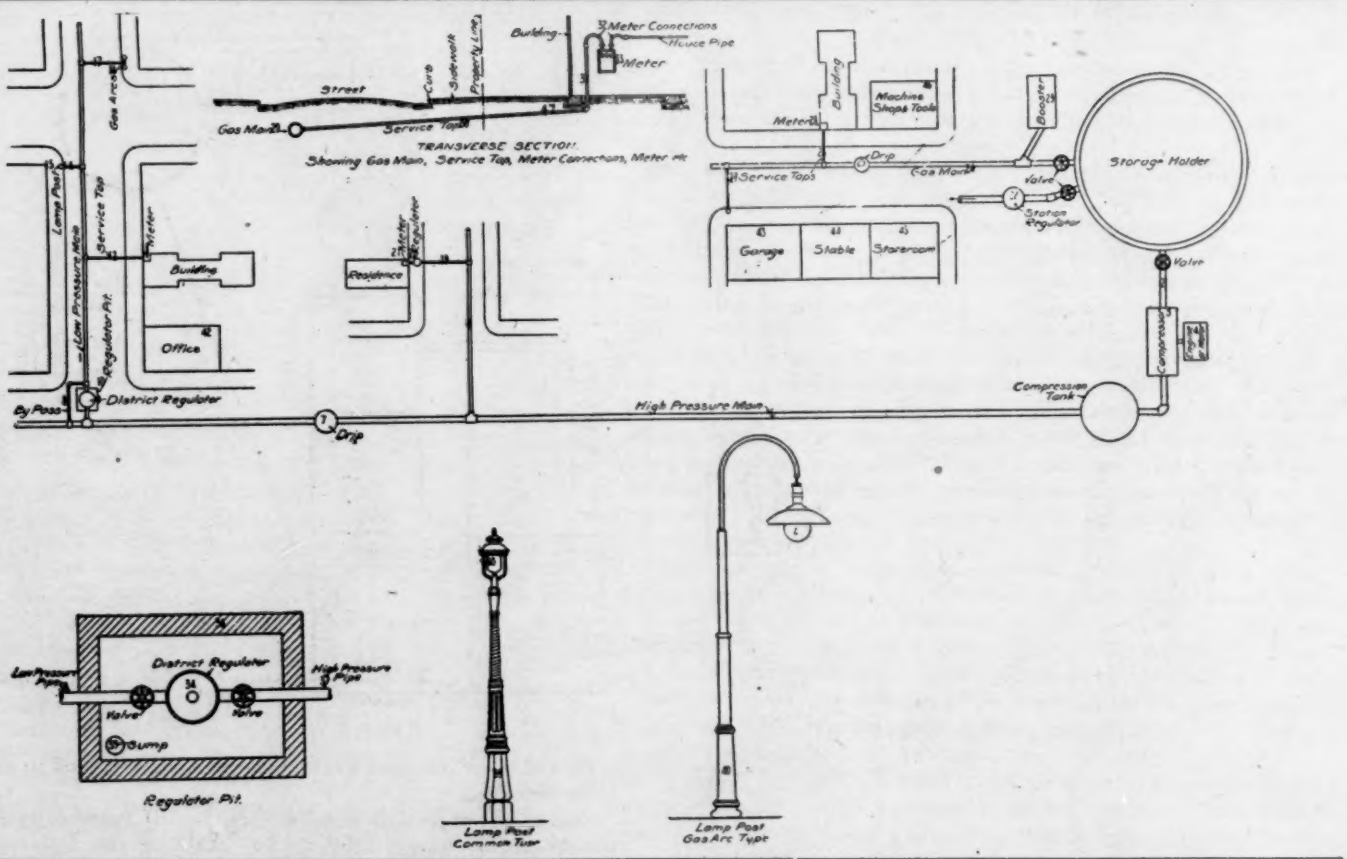
Capital is also divisible into original capital, additions and betterments, as defined below:

Original capital is that put into service at the outset of an enterprise.

Additions include additional structures, facilities and units of equipment not taking the place of anything previously existing.

Betterments include the enlargement or improvement, giving greater capacity to existing structures, facilities and units of equipment.

By revenues are meant all amounts of money which the corporation receives or becomes lawfully entitled to recover for services rendered, for products sold, as gross profits on merchandize sold, or as a return upon its property (or interests in property). Revenues are classified as operating revenues and non-operating revenues.



Distribution Chart for Gas Works Accounting.

Operating revenues are those derived from the sale of products and merchandize, from services rendered, and from returns on property used by the person or corporation in its own operations.

Non-operating revenues are those derived as a return upon the property of the corporation in the hands of others or from interests in property in the hands of others. They may be sub-classified as rents, interests, dividends and miscellaneous.

Divisional revenues are those derived from the sale of products, services rendered, gross profits on merchandize sold, or returns on property (or interests in property), within the divisions or districts.

Gas department revenue includes all revenue derived from the sale of gas for light, heat or power.

[Official Report.—Revised by the Secretary.]

PROCEEDINGS, NINTH ANNUAL MEETING, ILLINOIS GAS ASSOCIATION.

Held in La Salle Hotel, Chicago, March 19 and 20, 1913.

First Day—Morning Session.

The ninth annual meeting of the Illinois Gas Association (held in the Red Room, Hotel La Salle) was called to order the morning of Wednesday, March 19, by the President, Mr. H O. Channon, Quincy, Ills., who said: Our first action has to do with the first item on the programme which is the reading of the report of the Board of Directors. Mr. Clark will please read the report.

Report of the Board of Directors.

This was read by Mr. Clark, as follows:

Your Board of Directors begs to report as follows: During the year two meeting were held, the first on May 22d last. The following appointments were made:

Technical Committee.—J. B. Hirst, E. Jacobson, W. L. Powers.

Public Relations Committee.—H. O. Channon, J. H. Eustace, H. L. Rice, E. H. Negley, R. S. Wallace.

Entertainment Committee.—E. Jacobson, S. D. Blanchard, R. J. Hoffman.

Nominating Committee.—C. W. Bradley, C. B. Strohn, J. P. Doan.

Committee on Accidents.—L. H. Johnson, R. H. Clark, A. S. Harrington, F. E. Luther, F. W. Reimers.

At the second meeting (held at La Salle Hotel, March 18th, 1913) the Technical Committee reported that the following papers had been accepted for presentation at this annual meeting:

"Report of Committee on Public Relations," by Mr. H. O. Channon."

"Promotion of Friendly Public Relations Through Educational Publicity," by Mr. H. J. Gonden.

"Gas Purification," by Mr. A. S. B. Little.

"Report of Committee on Accidents," by Mr. L. H. Johnson.

"The Possibilities of Gas as an Industrial Fuel, by Mr. F. F. Cauley.

"Education as a Means to Greater Efficiency in the Gas Industry," by Mr. C. E. Reinicker.

"How to Develop an Ideal Complaint Man," by Mr. W. F. Yardley.

"A Convenient and Reasonably Accurate Photometric Standard," by Mr. H. L. Farrar.

By a mail vote (December 20th, 1912) the following were elected to membership:

Active.

Carroll, F. J.	Furlong, A. D.	Marshall, L. E.
Childs, A. W.	Markley, J. C.	Russell, W. M.

Associate.

Alexander, A.	Gonden, H. J.	Nash, R. J.
Behringer, E. A.	Harrison, C. R.	Nowlin, R. H.
Bingham, R. W.	Hutchins, F. E.	O'Morrow, W. E.
Caldwell, J. H.	Jackson, C. W.	Peck, A. P.
Carlsen, J. G.	Keeler, F. D.	Pilz, C.
Carret, F. W.	Koller, H. C.	Reid, C. W.
Channon, H.	Kuerst, A.	Rusterholz, R. W.
Clark, J. C.	Limbert, G. B.	Stevens, C. N.
Curtis, F.	Lucia, E. A.	Wallace, A. J.
Davies, W. B.	Mason, J. A.	Williamson, R.
Franklin, W. D.	Miller, F. A.	

Junior.

Forbes, W. M.	MacPherson, W. J.	McAfee, L. D.
	Wilbur. R. H.	

The following applications were received since then, and are now favorably recommended to the Association:

Active.

Callahan, E. L.	Fritz, W. E.	Milliken, R.
Cheevers, W. N.	Goetsch, E. H.	Monks, J. R.
Corken, E. E.	Hulswit, F. T.	Morgan, C. S.
Cutler, V. M.	Irwin, E. V.	Perkins, J. A.
Dunlap, C. C.	Keeth, G.	Saunders, S. D.
England, A. E.	Kennedy, V. N.	Stretch, R.
Fisher, Geo.	Laub, C. R.	Sturtevant, E. L.
Ford, T. R.	McDonnell, C.	Tyler, F. T.

Associate.

Case, F. B.	Gillett, F. A.	Simonds, G. L.
Curfman, F. G.	Harter, N. S.	Schirathin, J.
Douglas, A. C.	Hults, E. A.	Smith, C. S.
Epp, W. R.	Knight, A. F.	Sperry, R. E.
Elliot, H. J.	Moffett, J. Mc.	Stevens, F. E.
Enright, F. J.	Ponic, J. L.	Strain, J. R.
Foster, J. F.	Potter, J. L.	Strause, H.
Guitteau, W. S.	Raymond, H. S.	Thurston, C. C.
Weaver, H. P.	Weadley, W. F.	

Junior.

Meyer, A. F. Stephens, J. B.

TREASURER'S REPORT.

The Treasurer reports a balance and receipts for the year of $2,281.97, with expenditures of $2,201.23, and a balance on hand, as of March 18th, 1913, of $80.74.

During the past year, many changes in our membership have occurred. On March 19th, 1912, we had: One Honorary; 148 Active; 56 Associate, and 5 Junior members, or a total of 210. The following deaths were reported to the Secretary during the year:

Honorary.—J. B. Howard.
Active.—W. E. McCullough.
Associate.—B. G. McNabb and Mark Leavenworth.

Twenty members resigned. The membership of the Association today is as follows: Active, 184; Associate, 116; Junior, 13; total, 313.

On motion the report was accepted and ordered filed.

ELECTION OF NEW MEMBERS.

The President—Next in order is the election of new members, which, according to the Constitution, must be by ballot. You heard the list read.

On motion of Mr. Schutt (seconded) the Secretary was instructed to cast the ballot of the Association in favor of the election to membership of the gentlemen named. And the Secretary subsequently reported that the instruction had been carried out.

The President then read his

INAUGURAL ADDRESS.

[For the text of which see *ante*, April 14, p. 242.]

On motion, it was ordered that the Address be referred to a committee of three, for consideration and reporting.

The President announced the next business would be the appointment of temporary committees, and called especial attention to the loss sustained by the Association in the death, during the year, of their only Honorary Member; "Uncle" Jerry Howard. He declared it would be not only proper, but would also be their bounden duty to take appropriate action respecting the great loss sustained by the Association through that sad event.

On motion of Mr. Wallace the Chair was instructed to appoint a committee of three to prepare proper resolutions in the premises.

The President said he would announce that committee later on, and called for the

REPORT OF THE COMMITTEE ON PUBLIC RELATIONS,

which was read as follows by Mr. H. L. Rice:

The Public Relations Committee offers as its report the report of the Sub Committee on Standards of Service, Testing Apparatus and Testing Methods which it has approved.

Your Special Committee begs to report as follows:

During the year 1910-11 the Public Relations Committee made an investigation of the standards in use throughout the State. The report at the annual meeting of 1911 showed there was need of improvement in the conditions existing and this special committee was appointed to pursue the subject. At last year's meeting we presented a preliminary report, and were continued in the work. In pursuance of our instructions we duly forwarded to every member a printed copy of our first report and the following letter: "Fellow Member, Illinois Gas Association: Dear Sir.—We are sending you herewith a copy of the report of the Committee on 'Standards of Service, Testing Apparatus and Testing Methods.' The Committee has complied with the first part of the instructions by sending you this report, and you are earnestly requested to study the same, and to present to the Committee, at the earliest possible moment, such criticisms and suggestions as you have to offer regarding the report, which may be of use in determining its final form.

"Please do not lay this matter aside, trusting to others to present your suggestions, because the Committee needs the help of every member. This is one of the most important matters that our Association has considered. It is a subject now receiving the attention of the National Government, and a subject which will be one of the first to engage the attention of a public utility commission, the advisability of which is already being considered by a Committee of the State Legislature, and careful action at this time may be of great practical importance to every member.

"Therefore, please give this subject your careful consideration and write the Committee fully your opinions of the report and as to what changes or additions you wish to see incorporated in the final draft.

"Please address your communication to the Committee, in care of H. L. Rice, Aurora. Yours very truly,

H. L. RICE,
H. G. STILLSON, } Committee."

September 4th, 1912.

To this letter not a single reply has been received. We do not feel that this apparent lack of interest in this important matter is real, or that there is actual indifference on the subject among our members. Unfortunately, it is too often the case that the rank-and-file of our Associations are willing to leave to the few the entire burden and responsibility of the work, forgetting the value of varied counsel and the absolute necessity of a wide viewpoint for successful action. Members may compliment committees by entire trust in their judgment, yet handicap them seriously by withholding valuable comment and criticism.

Our instructions required us to offer a final report in advance of the meeting; but, embarrassed by your failure to co-operate, we have felt unable to proceed this far. Also we are informed that the Public Relations Committee of our governing Association, the Institute, is now investigating certain important aspects of our subject, and it has been suggested that our Association defer for a period any final expression of its views. We can, however, offer you some results of our study of the past year, and this we, therefore, do as a preliminary report, and an expression of our present views.

STANDARDS.—*Heating and Lighting Value.*—The tendency to fix definite standards of value, either by legislative enactment or commission ruling, and applicable without change to large areas, continues to extend. Little account has been taken as yet in these enactments of the new methods of production to which the industry is awakening, or of the possibilities which lie in long distance transmission, if unhampered by impossible conditions.

Our interest, the public interest, and the fullest economical development of our industry, all demand that no enactment of a standard of value shall be made except in full recognition of the fact that the price of gas and its value for service are inseparably interlocked, and that no community or aggregation of communities should be debarred by any inflexible standard of value from the opportunity of securing the greatest number of units of service for a unit price. If economical methods of production shall become such that gas of 550 B.T.U. can be produced and sold relatively cheaper than gas of 600 B.T.U.; if, by using high pressure transmission, two or more large communities can be linked to one generating station and thus be served gas lowered in value by compression, but yet relatively cheaper in price; if some small town can be similarly served and given a convenience otherwise impossible at any reasonable price; there must be no law or ruling that will prevent such service and such economical development of our business.

Service limitations exist. Of course, gas must be usable within the bounds of convenience; thus heating values as low as those of blast furnace or producer gas would not serve the public, even if distribution cost did not overbalance all possible saving. On the other hand the gas consumers of Cincinnati not long since changed from high candle power to gas of only nominal candle power, to their great financial advantage, a good example be it noted to the benefit of untrammeled bargaining.

We believe in standards of value and purity. We have from the first emphasized the fact that price means nothing except in its relation to the quality of product delivered; but we also believe in the corollary that standards mean nothing except in relation to price and the cost of production on which price must be based.

We, therefore, urge a firm stand by this Association on the following proposition. That a standard of value for gas should be fixed from time-to-time by properly constituted authority for general average conditions, but that no such standard should be unalterable for any community or independent of particular circumstances. That

(*Continued on page 274.*)

THE AMERICAN GAS LIGHT JOURNAL

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NEW YORK, MONDAY, APRIL 28, 1913.

[Official Notice.]

Ninth Annual Meeting, Southwestern Electrical and Gas Association.

Office of the Secretary,
Slaughter Building,
Dallas, Tex., April 5, 1913.

To the Members: The Ninth Annual Convention of the Southwestern Electrical and Gas Association will be held at Galveston, Tex., May 21, 22, 23 and 24—a 4-day meeting, instead of 3 days, as heretofore, the Association having so increased in scope and numbers as to necessitate more time for its proceedings. In addition, it has been found necessary to have "parallel sessions" for the gas members and the accountants, these to "parallel" regular sessions which are on subjects not interesting to those attending the gas and accounting sessions. One full session will be given up, as heretofore, to the "Supply Men," who have promised that it shall not be the *least* interestinng session of the Convention. This will be followed, in the evening, with a "Rejuvenation" of the Sons of Jove, at which the National Deities will preside.

A large attendance is expected from the East and North, two special cars having already been reserved, from St. Louis to Dallas, where it is expected to "hitch on" enough Texas delegates to make a solid "Convention train" from there to Galveston.

The official and definite programme, with list of papers and topics for discussion will be published in a short time. Full information as to railroad rates and routes, hotel accommodation, exhibits, etc., may be obtained by addressing the Secretary, as above.

Yours truly, H. S. Cooper, Secretary.

[Official Notice.]

Ninth Annual Meeting, Iowa District Gas Association.

Iowa District Gas Association,
Office of the Secretary,
Des Moines, Ia., April 7th, 1913.

To the Members: The Ninth Annual Meeting of the Iowa District Gas Association will be held in Burlington, Ia., May 7th, 8th and 9th. The headquarters of the Association will be at the Burlington Hotel. Early reservations should be made to secure the best accommodations. Mr. E. D. Clary, Superintendent Burlington Gas Light Company, Chairman of the Committee on Arrangements, will make reservations on request. The following papers are promised for the meeting:

"The Prepayment Meter" (an answer to Mr. Weisgerber's paper of the last meeting); by Mr. Thos. Crawford.
"The Welfare of the Employee," by Mr. G. W. Clabaugh.
"Operating a Store Room," by Mr. W. H. James.
"Recent Developments in Industrial Appliances," by Mr. E. C. Weisgerber.
"Advertising," by Mr. Fenton P. Kelsey.
"Improving Operating Conditions for the Small Works," by Mr. H. G. Stillson.
"Reducing Boiler Fuel in Water Gas Manufacturing," by Mr. T. B. Genay.
"Some Distribution Experiences," by Mr. W. H. Merritt.

Mr. E. G. Pratt will discuss the oil situation. In addition, the following Standing Committees will report: Manufacturing, Distribution, Construction, New Business, and Public Relations.

On May 8th, the convention will go by steamer, on the Mississippi, to Keokuk, returning the same evening. One session will be held on the boat. The afternoon will be spent inspecting the new dam and power plant. Other attractive entertainment features are being arranged. G. I. Vincent, Secretary.

DEATH OF MR. KERR MURRAY MITCHELL.

With exceeding regret we are forced to chronicle the death of Mr. Kerr Murray Mitchell, whose passing away occurred at his home in St. Joseph, Mo., the evening of the 18th inst. Not of robust health for some years, nevertheless, with the unfaltering courage that was ever a marked characteristic of the man, he fought disease with a pertinacity that often caused his friends (and those were many) to marvel. Deceased was in his 59th year, having been born in Buffalo, N. Y., 1854. He is survived by his widow, a son and two daughters. We have in preparation a story of his useful life.

BRIEFLY TOLD.

Third Annual Meeting, New Jersey State Gas Association.—The Third Annual Meeting of this Association was held in the Public Service Building, Trenton, N. J., Wednesday, April 23d. The session was called to order by the President, Mr. W. H. Pettes, at 11 o'clock A.M. As Secretary Osborn had not then arrived, Mr. Louis Stotz, Secretary of the National Commercial Gas Association, addressed the meeting before the regular order was instituted. Mr. Stotz read the prospectus of the National Advertising Campaign, which is now in the hands of the printers, and which will be sent, within the next 10 days, to every gas company in the United States and Canada. This nation-wide campaign is ready to be inaugurated, and already has the pledged support of several of the largest syndicate companies.

The first regular business was the roll call which showed an attendance of 40 members in addition to 20 visitors. The reading of the minutes of the last meeting was dispensed with, and there being no formal reports for presentation, the next business was the election of officers for the coming year. The by-laws were suspended to admit of open nominations, and upon President Pettes declining renomination (as he expressed it, for the good of the Association), Mr. C. F. Butcher (Freehold) was elected President. For Vice-President, "Our Mutual Friend," Mr. I. W. Peffly, was chosen. For Secretary-Treasurer, Mr O. F. Potter (Newark). The three new Directors, to serve for 2 years, were Messrs. Stanley Grady, Ralph Garrison and A. H. Osborn.

Resolutions were passed recording appreciation of the efforts and successes of the Association under the retiring President's administration, and adding his name to the Board of Directors, *ex officio*.

A recess for lunch was declared, to terminate a 2 P.M. Assembling promptly after luncheon, the set subject, "Illumination," was opened by Mr. W. W. Barnes, who described and exhibited the latest departures in fixture designs. Among the interesting new things he showed were, inverted arms for adapting stock fixtures for new lights; an inverted fixture with straight bottom outlet for a portable connection; a combination dome, with one inverted gas and two electric outlets inside; a gas dome with independent outlet for a gas coffee percolator or chafing dish; also, a line of semi-indirect fixtures for either gas or electric, that have been installed as permanent lighting equipment in the new Public Service Building, in which the meeting was being held, and in a number of other lighting companies' offices. Mr. J. P. Conroy described and dissected the newest productions of his Company, showing the interchangeability of the main valves and other parts of the General Gas Light Company's standard arc. He showed an ornamental lamp, the new ball-with-chain stem; a white enammelled semi-indirect unit, and the Humphrey gas iron. Mr. Hammerstrom exhibited and described the newest Welsbach productions, and incidentally gave a very "illuminating" talk on merchandising. The new things he showed were the No. 20 single-mantle unit; the single-mantle, Portico lamp, and the new outside arc; the Junior light with fibre key socket; some semi-indirect applications; the electrolier; a pyro-lighter for permanent attachment to overhead lights; and the wonderful "Ives' Day Light Producer." These expositions were thoroughly appreciated, and understandingly discussed by the members, those most aggresive in the discussions being Mr. Hanlan, of Newark, and Mr. Cohn, of Atlantic City. During the afternoon session the new officers and Directors held a session and named their sub-committees. President Butcher announced that the July meeting would be at Asbury Park. Secretary Potter asked that the members make use of the question box that he intended to inaugurate, and incidentally send in checks for their annual dues. At 4:45 the meeting was adjourned.

May Meeting, Illuminating Engineering Society.—Mr. Clarence L. Law, Secretary, New York Section, Illuminating Engineering Society, informs us that the May meeting of the Section will be held at 8:15 o'clock, the evening of the 8th prox., in the Clymer Street Theater, 163 Clymer street, Brooklyn. The paper of the evening will be presented by Mr. Bassett Jones, and the topic is "Stage Lighting." He will, in its delivery be co-operatively assisted by the "Hewlett-Basing Studios," and the lecture will be demonstrated by means of scenery, modern stage lighting devices and living models. It is proposed to assemble for dinner in the Cafe Boulevard, Second avenue and Tenth street, New York, at 6 P.M., the charge for which will be $1 per plate. From thence special 'buses will be in readiness to convey the members and their guests to the Theater and return, for which an additional charge of 50 cents is to be made. Secretary

Law asks that members receiving the postal notification to be certain to fill out the return postal attached, so that he may know how many will attend, that action in this case being particularly urgent, in that the capacity is limited to 100. Admission is by ticket only, issued by the Secretary. His address is 124 West 42d street, New York.

UTILITIES AND FLOOD LOSSES.—The State authorities of Ohio are concerning themselves about the burden of replacements to plant and distribution systems put upon public service companies by reason of the late disastrous floods. The sentiment in high places seems to be that the companies should be allowed to capitalize these replacements instead of being required to take them out of surplus and future earnings. Governor Cox is quoted as saying that he is in favor of a plan that will cause minimum of hardship and enable the companies to spread these damage costs over a term of years. The attitude of the Public Service Commission, in respect of the matter, is indicated by Commissioner Hughes, who also expressed a desire to help the utilities, and who suggests that, if the laws of the State are not broad enough to give the Commission power in the premises, the Legislature now in session should give it that authority. He also thinks, in consideration of the loss of present and future earnings, that some of the companies have suffered, that the Commission should have the power to adjust rates to help make up these losses.

SEVENTEENTH SESSION, "GAS MEETERS," NEW YORK SECTION.—The seventeenth session of the New York Section of "The Gas Meeters" was held the evening of the 24th inst., in "Churchill's," New York city. The assemblage was particularly notable, in that it marked the initial "Ladies' Night" of the organization. Judged from its attendance viewpoint it was a great success, for 96 "Meeters," "better-halves" and other "improved attachments" were assembled by 7 P.M. in the named famous hostelry. A really informal social half-hour was indulged in before seats were taken at the long tables, which were spread along the balcony or mezannine overlooking the main dining room. The menu listed a well-selected lot of viands that were evidently toothsome and palatable, and during the putting away thereof added zest was gained through and by the means of an excellent cabaret diversion. Shortly after 9 the diners moved to the foyer, and there listened to an address of congratulation and welcome, splendidly delivered by Mr. O. F. Potter (Newark, N. J.), who had been delegated by Chairman Barnes to express his gratification respecting the large attendance, and the further huge compliment paid the organization in the presence of so many fine exemplars of the fairer sex. Others who spoke were Messrs L. S. Bigelow, John Brock, F. P. Kelsey, W. S. Guitteau and S. K. Campbell. Chairman Barnes, in neat speech, averred stoutly that another "whole year" would not elapse ere the announcement of another "Ladies' Night" was made, and its joys experienced. A feature that followed was the rendition, by Messrs. Guitteau and Brock of their laughable skit on "Mind Reading," which was awarded generous applause. It is evident that considerable talent is both inherent and latent in the rank-and-file of "The Meeters," and when "Ladies' Night" is again in evidence it might be well to arrange for a cabaret, the talent to be of altogether home class. It would surely be a go.

INFLUENCE OF COPPER ON CORROSION OF IRON AND STEEL SHEETS.—At the 1912 meeting of the American Gas Institute, Mr. G. F. Ahlbrandt, in a paper on "Pure Iron versus Steel for Gas Holder Construction," gives the results of weather tests on the resistance to corrosion in sheets of open hearth steel and those of pure iron made in the same type of a furnace. These tests showed a very much higher resistance to corrosion on the part of the iron sheets during 16 months' exposure, and were interpreted as indicating that the steel sheets were really destroyed by electrolytic action between the metal base and the electro-chemically diffusing impurities. As showing the durability of pure iron, slides were exhibited of specimens said to be at least 500 years old, and of links from a chain bridge known to have been built more than 100 years ago. In the discussion of the paper mention was made of the occurrence of copper in some of these old specimens, and of its possible influence on corrosion. Exhaustive tests, covering a period of more than a year, have just been reported by Mr. D. M. Buck to the American Chemical Society. These tests were to compare the corrosion of sheets of regular basic open-hearth steel; basic open-hearth, rephosphorized; regular Bessemer steel; pure iron; and specimens of the three sheets with an added copper content of from 0.15 to 0.25 per cent. The tests were made with unpainted corrugated sheets of full-size, built into shed roofs; one erected in the Pennsylvania coke region, where the air contains appreciable amounts of sulphuric and sulphurous acids; one on the seacoast, where the air carries sodium chloride; and one in a rural district where the air is quite pure.

The analyses of the specimen sheets were as follows:

	C	Mn.	S.	P.	Co.
1. Open-hearth	0.10	0.34	0.034	0.019	....
2. " " dephosphorized.	0.13	0.45	0.036	0.042	....
3. Bessemer	0.08	0.46	0.070	0.096	....
4. Pure iron	0.02	0.03	0.034	0.003	0.06
5. No. 1 with copper added in ingot.					
6. No. 2 " " " "					
7. No. 3 " " " "					

After 7 months' exposure in the coke region, Nos. 1, 2 and 3 were failing and falling off, having rusted through; 4 months later Nos. 1, 2 and 3 had entirely disappeared; No. 4 had failed to the extent of the sheets dropping off; Nos. 5, 6 and 7 (the copper bearing sheets) are still intact. After 3 more months, No. 4 had entirely disappeared; and Nos. 5, 6 and 7 were yet in place. Commenting on electrolytic action, Mr. Buck says: "It is a well known fact that copper is electro-negative to iron, and that, when placed in contact with it, will stimulate corrosion in the latter. That the reverse is true when the copper is alloyed with the iron, and in solid solution in the crystal grains, may be due to the alloy taking in a measure the non-corrosive properties of the copper. It also appears that the alloy of copper and iron may be less electro-positive to the first film of rust formed, than is the non-copper steel, and that the consequent decrease in difference of potential may lessen corrosion." These tests would seem to show that a small copper content adds materially to the life of steel sheets, and renders them even more durable than those of so-called pure iron. Users of tin plate sheets and wrought pipe are materially interested in any processes that will add to the durability of manufactured iron.

CURRENT MENTION—

THE Columbus (O.) Construction Company, to promote gas companies, and to sell and install gas producing machinery, has been organized. Its headquarters are 49 North High street, Columbus; and Mr. Peter J. Sult is its President.

COMMENCING June 1st, the net gas rate in Quincy, Ills., will be put at $1.20 per 1,000 cubic feet. This makes the fourth voluntary reduction ordered by the present controllers of the plant, who assumed charge in 1906. Then the rate was $2 per 1,000.

MR. JAS. B. TOWNSEND, III., has been elected Treasurer and Assistant Secretary of the American Gas Company, vice the late Mr. W. T. Robinson. In this connection it would seem worthy of mention that the Company has removed to its new headquarters, Seventh and Locust streets, Phitadelphia.

A FEATURE of the social life of Waltham, Mass., as of the 18th inst., was the reunion of the Clark family, who assembled there to celebrate the 94th birthday of Mr. Lowell Clark. The veteran, who is still able to go out unattended on the streets of Waltham, was for several terms President of the Waltham Gas Company.

MR J. P. MCGUIGAN, Purchasing Agent for the Milwaukee (Wis.) Coke and Gas Company, has been appointed a member of the Public Debt Commission.

THE second annual meeting of the La Crosse (Wis.) Gas and Electric Association was held in the Association's meeting room, 222 Main street, La Crosse, the evening of Tuesday, the 15th inst. President Thurston Owens introduced a number of newcomers to La Crosse, including Messrs. S. W. Cheney, Frank P. Johnston ahd Jos. McGinley. A very interesting paper on "The Manufacture of Gas" was read by Mr. John A. Patten, who has charge of the reconstruction of the Company's gas plant. The discussion of this paper closed the formal session. The members then enjoyed selections from the graphophone, including reproductions of the acts of Enrico Caruso and of "Harry" Lauder, through the courtesy of Mr. Carl B. Noelke. Refreshments and dancing concluded the second successful meeting, at which over 35 were present.

THIS La Crosse mention recalls the fact that Mr. C. W. Cheney, who was recently appointed Operating Engineer of the La Crosse Gas and Electric Company, is a graduate of the University of Wisconsin (Class of 1904), and completed the Post-Graduate course in 1905. In 1912, in consideration of a thesis prepared by him, he received a Master Degree in Engineering. In 1905 he entered the gas and electric business as Cadet Engineer with the Denver Gas and Electric Light Company, and in 1906 was appointed Superintendent of Distribution of the Lincoln (Neb.) Gas and Electric Company. Later he held a similar position with the Montgomery (Ala.) Light and Power Company. Since 1910 he has been connected with the engineering staff of the Railroad Commission, with headquarters in Milwaukee. As our readers know the La Crosse Company is a subsidiary of the American Public Utilities Company.

(*Continued from page 271.*)

it should be recognized always that price and quality are interlocked, and that the public interest and the progress of the industry demand free opportunity to benefit by special conditions of production or distribution.

We believe that the proper standard of value is that found in the expression of the total heating value. We are not prepared to make any recommendation as to advisable limits.

We believe that a firm stand should be taken by our Association against any standard of illuminating value, either as a sole standard of value or as part of a double standard including heating value. We agree with the argument of the Wisconsin Commission on this subject, and we further believe that an illuminating standard is uneconomical and subversive of the public interest. Set purposely low, it confesses its own lack of value; set higher, it is in restriction of that full progress of the industry in which the public has an indirect but none the less vital interest. Practically the sole remaining argument in its favor is that which recites that in some of our larger cities a small percentage of the population still depends on open flame for illumination, an argument which reduces to this that the thrift and energy of the many should be taxed in the interest of the few, who, not because they are uninstructed, but because they are unwilling, lag behind. Economical manufacture demands the widest latitude in methods, economical distribution the full service of high pressure methods as they may locally apply, methods which as is well known will entail candle power losses far out of proportion to impairment of heating value. There is no gas of reasonable heating value manufactured by any of the processes known to-day which will not furnish adequate illuminating value in open flame for all casual uses, even though compressed and transmitted long distances. For all regular lighting uses the mantle burner is economic and worthy of consideration by a progressive people who believe in conservation as a true and living doctrine.

For the determination of total heating value, we call your attention to the final report of the Calorimetry Committee, of the Institute, which has just been published, and we recommend that the methods and conclusions recited in the same be adopted and followed.

We believe that there is no gas company belonging to this Association which cannot afford the small outlay required for a calorimeter, or in which the ability to operate the same cannot be found. We believe that no company should continue to distribute its product without knowing and guaranteeing the heating value without which its price, as only one of two factors of service, becomes an unknown quantity, and we recommend that the influence of our Association and its officers be strongly thrown in that direction.

Sulphur.—We believe that gas should be distributed free from hydrogen sulphide as determined by the London Referee's test.

We do not believe in the necessity or advantage at the present time of any restriction or test for total sulphur. It is worthy of note that the public service commissions empowered to require this test have gradually diminished its frequency, and that in one case the requirement of a 20 grain maximum has been increased to 30 grains. Not only is the amount of total sulphur largely governed by the coal, but it has been ascertained that the American gas coals now being used give results within 30 grains in all the processes of manufacture now being followed. Also that gas containing up to 30 grains of sulphur per 100 cubic feet is merchantable and satisfactory for the public use. Under these circumstances the usefulness of any test is not apparent.

Ammonia.—It is also true, as recited by the Wisconsin Commission, that coal gas as at present manufactured in this country does not contain sufficient ammonia to be detrimental to the public health, and that testing for ammonia is, therefore, not of public interest. We believe, however, that it is of interest to gas companies, and that their true financial interest, even where the ammonia is not saved and marketed, lies in reducing the quantity of ammonia passing into the distributing system in order that corrosion in the same be kept within the smallest limits. Again, we feel that even our smallest companies can afford the expense and furnish the ability whereby daily tests may be made of the ammonia in their finished product, and we recommend that our coal gas companies adopt a standard of 10 grains, and institute frequent tests to maintain it. No special recommendation as to testing apparatus is necessary, as there are several cheap and efficient appliances on the market.

Pressure.—Good service demands that all gas customers shall receive their gas at adequate pressure at the meter outlet, and that the daily variation in this pressure at any meter shall be reasonable. The public and the companies are in accord on this, although not always in agreement on the limits to be adopted. Limits now in force by ordinance or commission ruling range from 1½ to 2 inches on the low side, and from 4 to 6 inches on the high. One of our member companies distributing much of its gas at high pressure through individual governors contributes the following interesting experience. In one of its communities troubles from blowing seals began to multiply. On investigation it was found that the house governors, set at 3 inches pressure, had been tampered with, and the pressure raised to 8 inches. Further inquiry disclosed the fact that the customers had been told that they would obtain greater efficiency and economy at the higher pressure, had actually experienced it, and the information had spread from neighbor to neighbor until the readjustment of the governor springs became widespread, and measures had to be taken to place them under lock. A rather potent argument against the necessity of any high limit on gas pressure for domestic use. Advantages of still higher pressure than 8 inches for some industrial uses and for high efficiency lamps are well known, and these special uses should be recognized in any rulings. For ordinary domestic use we believe in the establishment and maintenance of reasonable limits, and we would suggest a range from 1½ to 8 inches at the meter outlet, with a variation at any meter not exceeding 100 per cent. of the minimum. We believe that there should be no restriction of main pressures or of the use of governors where companies find them serviceable in connection with high main pressures. Legislation against such governors as now effective in one of our large northern cities seems to be directly opposed to the public interest, depriving the gas consumers of the advantage of modern economies in distribution, with no advantage or improvement in the actual service rendered.

We believe that there should be a much wider use of recording pressure gauges among our smaller companies. The report submitted in 1911 shows a great lack of these valuable instruments. We believe that no one of our companies is too small to afford and maintain at least three recording gauges on its gas pressures, one at the works, one at the office or other uptown station, and one of portable type for placement at different points in the distribution area, and we urge that the influence of our Association and its officials be strongly directed to this end.

Penalties.—We are opposed to penalties other than publicity, the most effective of all penalties, until it becomes clear that negligence is willful and continued.

The above is an expression of our personal views founded on the year's study of the situation. As already stated, and for the reasons given, we do not offer it as a final report. We feel, however, that we have brought our investigation to a point where it can best be continued through a larger body and we recommend therefore:

That the Special Committee on Standards and Testing Methods be discharged.

That this report and the reports of 1911 and 1912 be referred to the Public Relations' Committee.

That the Public Relations' Committee endeavor to ascertain the opinions of all the members on the reports, confer, if found desirable, with the Public Relations' Committee of the Institute, and with any commission or other legislative body that the State of Illinois may empower to discuss the general subject, and report final conclusions at the next annual meeting or as soon thereafter as may be found expedient.

Respectfully submitted,

H. L. Rice,
H. G. Stillson.

On motion of Mr. Rice (seconded by Mr. Wallace) the report and recommendation as offered by Mr. Child were ratified.

Discussion.

The President—The report is open for discussion. Does anyone care to criticize it in any way.

Mr. Baehr—I would like to urge the great importance of not being too hasty in action. Developments are very rapid in this line, and commissions all over the country are taking steps toward regulatory features. I would merely urge the Association to make haste slowly.

The President—Is there any further discussion on this report? I think the Association owes the special committee a vote of thanks.

Mr. Steinwedell—I moved a vote of thanks to the committee for the manner in which this subject was handled. [Seconded and carried.]

The President then introduced Mr. H. J. Gonden, who read his paper entitled,

PROMOTION OF FRIENDLY PUBLIC RELATIONS THROUGH EDUCATIONAL PUBLICITY.

[For the text of the paper see *ante*, April 14, p. 243.]

Discussion.

The President—You have heard Mr. Gonden's paper, which is on a timely subject. We are ready for the discussion.

Mr. Owens—Mr. Gonden told us lots of things we should do, and I would like to make a suggestion or two as to how we can do some of them. In advertising I believe that any new rule of the company, or new appliances brought out, or any improvement in the service that is worth talking to the employees about should be advertised. I believe all advertising matter prepared should be criticized by heads of departments. I think the men in the company should have a chance to criticize the advertising matter before it goes out, and, not only criticize it but perhaps tell one how to improve it. Mr. Gonden tells us that the man going to do any advertising should be educated in advertising *per se*. This would include style and make-up of advertisements. One thing Mr. Gonden didn't say is, "Don't advertise unless you have something to say."

Mr. Kelsey—This matter has occupied my attention for the last 8 years. When with the Milwaukee Company the way we thought best to approach the situation was from the commercial basis. I think that most companies who begin publicity in a large way are kicked into it. That seems to be the development on the part of almost every company that gets into print. Rushing to defend themselves they finally find there is a way of convincing people, then they get to a reasonable basis. My experience is that plans of this sort tend to peter out, simply because the matter of giving your customers a little Sunday School talk every day, comes to be discounted by a majority of the people who are your customers. You must remember you are catering to the mass of the people, not to the more intelligent ones, and such being the case, the bond of self-interest (really the only vital bond) strikes me as the line on which to approach them. We find we can best create favorable public sentiment by telling people how we are able to serve them commercially. For instance, our house-to-house maintenance service for gas ranges. We are able immediately to tie that up with our facilities for furnishing them with first-class ranges. Every inch of newspaper space we use is directly valuable in an advertising way, and commercially. Take the house-to-house light maintenance of commercial gas arcs, every one of those, when the merits thereof are rightly presented, makes a profound impression upon your customers. House-to-house gas light campaigns, while a straight out commercial proposition, have an effect on the customers that cannot be gauged until you go into it. Responding to an advertisement a woman called up the office and asked us to send one of the men who were showing the new reflex Welsbach light. Our man who was working that territory happened to knock on her door just as she hung up the telephone. She said, "Are you the man with the new light?" He said, "Yes." Well, the woman let him put up the light, and she told her neighbor, Mrs. Jones, the next day what wonderful service the gas company gave. We have experienced engineers and experienced managers, and we have let this simple thing of advertising go by the board for many years, so it is up to us to get busy and really have scientific service in that direction just as we have in other phases of our business.

Mr. Rice—One feature of this publicity work I would like to emphasize as peculiarly the duty of the manager or commercial agent. Every community has a certain number of would-be scientists; people who know it all. They could build the Panama canal better than it is being done, and run the gas business much better than we can. Those people know everything about a gas meter and all about making gas, and they have a great deal to say about such things as pumping air into gas and other important matters. Not long ago a newspaper in Chicago solemnly stated that the Peoples Gas Light & Coke Company had, at one of its stations, a large rotary pump the sole duty of which was to pump air into the tanks. You all know how hard it is to combat such statements. I feel we don't sufficiently go to the root of the matter. People must have something to talk about, and one of these would-be-scientists, in the course of an evening, can circulate more things detrimental to a gas company than can be combatted in a long period. Such people frequently write letters to the company explaining their views, especially when having a complaint of their own. The advantage of such letters is that they point out to the manager the existence and location of these centers of unrest in the community. I always felt that these people should not be regarded simply as bores and no account and best to be let alone, but that it is very important to try to educate them, even if it is often discouraging work. You may write a long letter to a man explaining some point the pumping of air into gas, the running wild of a meter or the idea that meter registrations are purposely taken wrong. He comes back with a 5-line letter, as one did recently, stating that he read your letter and has studied the matter but is not convinced. I believe, however, that such work should be kept up. The companies should get out of their attitude of non attention and instead give very careful attention to these centers of unrest, and that every such person should be taken in hand in an endeavor to educate him in the actual science of gas making and distributing. If he has a particular point in his mind, try to get him to the works or to the office where you can possibly convince him. If you can convince him, or even shake him in his views, you will stop him holding forth in the community and getting other people to believe them.

Mr. Gonden—Publicity work is well past the experimental stage, regarding the commercial features of your business, as well as public policy which has been tried in a number of cities. I think we should invite complaints and criticisms instead of avoiding them. I have in mind a company in a large city that was a few years ago the most hated public service corporation in the country. It was owned by a parent company in New York. One of the officers of the latter said to the operating head, "One thing I notice here; you haven't got sufficient telephone service service in your office. You have a few extension 'phones, but only one trunk line." The local manager said, "Why, that is more than we want. Nothing comes in over that telephone but complaints." The New Yorker said, "That is why you want a dozen trunk lines. Get your complaints in and attend to them." While I agree that publicity work should be directed largely toward the development of the commercial department, I think much matter pertaining to your public relations should be worked in, not frequently (say once or twice a month) in order to overcome some of the popular fallacies. You know your pipes are in the public streets for the service of the public, and the use that is being made of the public streets is a public one. You are not making any private use of the street by putting your pipes in them, although there is a popular fallacy to such effect. Scores of these popular fallacies have become fixed in the public mind, and these can only be corrected and overcome by scientific educational publicity.

(To be Continued.)

Making Night Publicity Profitable.

By Mr. Warfield Webb.

Lighting as a means for greater publicity is more and-more valued on account of its drawing power. In this age night in the cities is many times not far removed from day in the matter of activity of a certain type. Business, strictly speaking, is not nearly so active as it was in the older days; but, on the other hand, the pleasure seekers and the travelers by night have multiplied by the thousand. This throng of wanderers can better be appealed to many times after the day's grind is at an end, and the mind being in a more receptive mood, lighted publicity will be a much more powerful attraction to many of these people than the invitations by day.

The value of this method of reaching the public, in sign, window, spectacular display or in flashlights—all has an influence upon the passerby. He will be more likely to stop and read the sign, to note the window display, to view with interest and an awakened observation the advertised commodity now, than he would even dream of doing during the rush hours. These facts have come to be looked upon with serious consideration by the largest advertisers in the country, and the fact that there has been a continuous increase in the number, character and magnitude of the lighted displays is the decision of the public for this increase.

Placing yourself in the position of any pedestrian on the streets after nightfall, you will be readily convinced that there is a wonderful value in this means of calling attention to a given article—a railroad, an automobile, and to many hundreds of other things that are for every man's use. It will be a hint that will not be forgotten. The rush being over, one is in a mood for thought. Seeking information, you will be attracted to the light, just as the infant that turns his eyes to to the heavens even before he will notice his mother.

The advantages should be given special attention. If others find the idea one of profit, why should you not do as well? Perhaps he feels, if his store for instance is located at an out of the way place,

that the results will not justify the expenditure of a few dollars per month. This is a mistake. It is the man, even though he be of limited business, who makes his own house an attraction that will soonest realize the wisdom of night publicity. By this means he will do more than with any other thing to attract attention to his place, and results will be certain to materialize.

The window display should be studied out with care, for the inspectors who pass there at night are sure to be more critical than the hurrying throngs during the day. Then the light makes the inspection more exact. If there is care in this feature a most favorable impression will be made; and the impression is the first step toward securing a customer. If you are fortunate in making a good impression, there will be no trouble in getting the customers to come, and to continue to come. Plenty of light is desired, for little light will only be a means of arousing the curosity sufficient to cause the greater disgust, that would otherwise be the cause for favorable comment.

The sign that heralds the voice of light at night is a most impressive method of reaching the prospective buyer. This will burn itself into his brain with an indelible impression, provided only that there has been an effort of the right kind on the part of the publicity seeker. It all depends upon the force of the appeal, and to brilliancy of the effort made to impress deeply. The opportunities are many, and the successful advertisers are those who are making this feature of night publicity a study for actual results. The means are at hand, and they are numerous. However, it is for the lighting organizations to lead the way, to show the user of light how and where and when to advertise in this way. He will lead the man who is anxious to cry his wares, and he will be the trumpet bearer to point out the way. How many are the opportunities, and what a vast field for operations! The time is at hand, the success is within reach.

What a golden opportunity for the lighting fraternity. How easy to call attention to the thousands of advantages that are offered for the public heralding of the merchant's wares. It was not many years ago that the streets of many of our cities were without more than the ordinary attraction to the night strollers and the happy throng of idle men and women. Those who were called out on business, or who were on pleasure bent, found no attraction in the shops, no emblazoned signs, no displays that beckoned to them a welcome. The power of the night advertising idea then dawned upon the merchants, who began to note that it was well to extend invitations to the public, even if their places of business were not open for trade.

The mind will not lose sight of an impression made with the glare of the whiteness that the night signs or the windows herald. Then is the hour that will be most certain to create the deeper impression. The light will give cheer, and the cheer will assist in making the passerby more grateful to the man who has been considerate enough to make this sunshine, even after hours.

There should be method in this form of publicity. It is a waste of money to simply erect a sign or paint an illuminated display, or light the windows of the store without making the same a feature. The man who gazes upon these objects, be they signs or articles, is eager to see therein something that will be worth while to him. Attracted by the light, he looks with the intention of ascertaining the reason therefor. If you make the sign or the display a living, breathing, pulsating advertisement, or cause the window to team with attractions, there will be no cause for complaint.

There should be a close study of this question in order to ascertain the most satisfactory way to arrive at the desired end. The organization selling either gas or electric power has here opportunity that teems with wonderful possibilities. It should be of assistance to the merchant, manufacturer or corporation desirous of seeking this form of publicity, and thereby increase the use of its commodity.

Great Coal Reserves in Colorado.

When the total production of coal in the United States, great as it is, is compared with the known tonnage in the ground, it sinks into relative insignificance. Thus, four recently described coal fields in Colorado are estimated by the United States Geological Survey to contain more than 12 billion short tons of coal, or three fourths of the total amount of coal that has been mined and lost through mining processes in the United States since the beginning of the industry. These are known as the coal fields of the Grand Mesa and the West Elk Mountains, Colorado, and are discussed by Mr. Willis T. Lee, in Bulletin 510, just issued by the United States Geological Survey. These fields constitute part of the Uinta coal region, in the Rocky Mountain province, and lie partly in west-central Colorado and partly in eastern Utah. The part of the Uinta region described in the Bulletin is divided into four more or less di tinct fields, called Grand Mesa, Floresta, Mount Carbon and Crested Butte.

The investigations described in the Bu lletin extended over a period of three years, and were made for the purpose of ascertaining the geologic relations of the coal bearing rocks to other formations, of classifying the land by legal subdivisions as coal land and non-coal land, and of determining the value of the coal land by ascertaining the thickness of the coal beds, the character and quality of the coal, its accessibility with reference to topographic features, and its location with reference to lines of transportation.

Because of the uncertainty in many places as to the number of coal beds and the still greater uncertainty as to their variation in thickness, no close estimate can be made of the quantity of coal in the fields. However, a computation, based on moderate estimates of thickness, gives 12,178,214,000 short tons as the amount of recoverable coal in the Grand Mesa and West Elk Mountain fields.

Special English Correspondence.

COMMUNICATED BY NORTON H. HUMPHRYS.

SALISBURY, ENGLAND, April 10, 1913.

The Ilkeston Gasholder Accident.—How to Deal with the Standby Customer.—The Increased Use of Vertical Retorts.

A report on the Ilkeston gasholder accident, by Mr. A. G. Drury, one of the Engineering Inspectors of the Local Government Board, has been issued as a Parliamentary paper, and in a circular letter from the Under-Secretary of State, that has been forwarded to all managers of gas works throughout the country. The report is summarized as follows:

"Although Mr. Drury is unable to state definitely the immediate cause of the disaster, he holds that the steel tank was too light in construction; and he expresses the opinion that, while there is no cause to condemn the use of steel tanks above ground, even of the spiral guided type, provided they are properly designed, constructed and maintained, care should be taken to insure that they are sufficiently strong, not only to meet ordinary working conditions, but also to meet such contingencies as the jamming or premature telescoping of lifts which experience has shown are liable to occur. Mr. Drury makes specific recommendations as to the precautions which should be adopted in regard to the choice of material, the factor of safety and design; and he lays stress on the desirability of a skilled engineer being in all cases employed by local authorities, and other bodies proposing to erect gasholders, to advise them in the choice of the best design from those submitted by competing firms."

The letter also suggests the desirability of considering this report with a view of preventing similar accidents in future.

Such consideration would have been greatly facilitated if the actual cause of the accident could have been definitely stated, and in the absence of such information it is difficult to decide upon the best methods of preventing such accidents in future. None of the experts examined at the inquiry, or who have discussed the matter in the technical press, appear to agree on this point, and the matter has been further complicated by the not unnatural desire, on the part of those actually interested in the Gadd & Mason system, or favorably disposed thereto, to show that the fact that the ill-fated holder was arranged to work on this system, and that the tank was, therefore, minus the usual piers or girders for carrying the external guide framing, could not by any possibility have been concerned in the catastrophe. As it is, the report enables almost everyone to indulge in the popular "I told you so." Those who have contended that some unusual jamming of the outer lift, leading to the unsealing of the inner lift, and the sudden drop of the same a distance of about 12 feet, was the exciting cause, will find comfort in references to the necessity for gasholder tanks to be strong enough to stand vertical stress. And those who hold that there was no exciting cause, but that the tank burst under ordinary working conditions, on account of inability to stand ordinary strain, will notice the conclusion that the tank was "too light in construction."

It is important to remember, in view of the general reference to gasholders of all kinds, that in this particular instance the tank was

entirely above ground, was made of steel plate and was without external guide framing. Conditions and criticism applied to it will, therefore, not hold good as applied to tanks built of other materials or sunk below ground and buttressed by the piers for carrying the columns and girders, to which a similar disaster could not by any reasonable possibility be anticipated. Although there are thousands of gasholders throughout the country, this disaster is without precedent, which of itself shows that suggestions of ignorance or carelessness in carrying out work of this description are scarcely called for. Instances are on record of grips becoming unsealed from some accidental cause, and the falling of the inner lift or lifts into the tank as a result. Only last week I heard of a grip losing its water when about 8 feet above bank level, with the result that the inner lift fell that distance. No harm was done, and neither holder nor tank (a sunk, brick one) shows any signs of mischief. This tank was thus proved to be equal to the conditions laid down by the inspector. Incidentally, a tank sunk to ground level is supported the whole of its depth by solid ground, because it is the invariable rule to fill up and solidly ram any space between the wall and the excavation. A masonry or brick tank, incidentally, would be equal to a considerable vertical strain, although such was not considered in the design, and a cast iron tank is always strengthened by girders of strong wrought iron. No doubt the result of this accident will be an increase in the factor of safety and the addition of some form of reinforcement corresponding to the support afforded by the earth to a sunk tank, to all above ground tanks.

The Ilkeston accident also disturbs another established custom, and that is the 3-months' guarantee. Hitherto this has been regarded as a sure method of securing safety and of efficiency. But if the argument that the Ilkeston tank failed through inherent weakness can be sustained, evidently this custom must be reconsidered, because the tank in question had not only been taken over from the makers, but had been in satisfactory operation for nearly 3 years. And this fact has also led to the suggestion that a structure such as a gasholder tank above ground, which, in addition to the standing load represented by the contained water, may also be subjected to varying strains due to weather and temperature conditions, wind, etc., may in course of time be weakened by "fatigue" similar to that known to obtain in the case of railway rolling stock. In that case a gasholder tank may be expected to have a working life, but hitherto this point has not received attention. Many tanks are in use to-day that have had a working life approaching 100 years.

All who are interested in the free supply of meters, cookers or other apparatus to consumers will do well to examine the practice followed at Aberdeen. The usual difficulty experienced in any branch of free fitting work is that it involves a considerable amount of waste. A number of people, when they hear that there is nothing to pay, think they might as well have the gas laid on and a meter, cooker, full complement of free fittings, etc., although they have not the slightest intention of using gas regularly. Perhaps they are travellers, only at home for a few weeks in the year. Or it may be a convenience to have the gas as a standby for emergency purposes. It is a difficulty that arises everywhere. The outlay is a fixed and definite amount, but the same cannot be said of the income. Under the Aberdeen system every consumer is made to pay a fair return on the special outlay incurred on his behalf, preferably by the consumption of an amount of gas proportioned to the value of such outlay, or failing that, by means of a rental taken at about 10 per cent. on list prices. The result of an examination of some 500 meters, taken at random throughout the district, ranging over the whole extent of the various sizes in use, showed that the consumption per light, as indicated by the nominal capacity, was 3,000 to 5,000 cubic feet per annum. For example, the average on 84 ten-light meters was 50,400 cubic feet, or 5,000 cubic feet per light, and on 63 hundred lights, 384,400 cubic feet, or 3,800 cubic feet per light. A minimum consumption has been fixed for each size of meter, based on a factor of 2,000 cubic feet per light. If the user of a 10-light meter consumes over 20,000 cubic feet of gas per annum, he is not charged meter rent. If less, he has to pay 5s. a year. On a similar basis, the user of a 200-light meter must consume over 400,000 cubic feet of gas per annum, or failing that pay a rent of 50s. a year. The consumer of less than the minimum is credited with a meter rent corresponding to his consumption. If the holder of a 200-light meter only uses 200,000 cubic feet of gas in the year, he is credited with a meter rent in proportion, which would be 100-light, and is called upon to pay the difference between the rent of a 200-light and a 100-light. Under this plan every consumer pays his own footing whether he uses gas or not. The same principle is applied to the free cookers. Any approved customer will be supplied with any one article (not more than one) which may be a cooker, range plate or griller, subject to a guaranteed consumption according to the value of the article, and fixed free of expense up to 50 feet of pipe. The consumption must be additional to the average lighting. The appliance must be used regularly for at least a year, and if required to be removed, altered in position, or exchanged within a less period, the consumer is charged with the expense. If the use of gas does not come up to the standard, the corporation may fix a smaller appliance. Gas fires are not on the free list, because of the irregular and uncertain consumption, but are supplied on rent.

The advantage of this plan is that the bad or unprofitable consumer has to pay for himself, and is thus prevented from becoming a general drag and charge on the undertaking. In the absence of a loading of this character, the distribution charges are reduced and the amount of such reduction goes directly towards an all-round reduction in price, which in its turn stimulates consumption. Not the least advantage of a minimum rate in any form is that the consumer, in order to make sure of not losing the benefit, uses anything up to 50 per cent. above the minimum. It is a powerful inducement to use gas.

The vertical retort is making considerable progress this season. The West Bromwich Corporation are putting down another installation equal to a production of 1,250,000 cubic feet of gas per day. The Corporation of Greenock have decided to invite tenders for a 2 million set. After inspecting the Woodall-Duckham, the Glover-West, the Wilson, the Dempster, and other systems, they have arrived at the conclusion that the adoption of the vertical system means a gain of 1,000 cubic feet of gas on each ton of coal carbonized, a reduction of 25 per cent. on the present retort house consumption of coke, improved quality of coke, and 5 per cent. more ammonia, and no naphthaline troubles. As there is almost a complete absence of the smoke, steam and dust at present experienced, there will not only be less pollution of the atmosphere, but greatly improved and healthier conditions for the workers. There will be lower working costs, greater regularity in the output and less liability to breakdowns. The saving under these various headings would be equal to 15 per cent. on the cost of the installation, and the Gas Committee are desirous of proceeding at once. The Aberdeen Corporation are putting down a Woodall-Duckham set, comprising 5 beds of 4's, each retort being 25 feet long, 5 feet 3 inches by 20 inches at bottom, and 3 feet 10 inches by 8 inches at top. These large retorts are capable of carbonizing 6 tons of coal in the 24 hours, so the entire set will be equal to nearly 1½ millions cubic feet of gas per day. Scotland is the birthplace of the vertical retort, where it has been largely used for many years in the distillation of shale for paraffine oil. The retorts are not heated to so high a temperature as is usual for coal gas, and it is stated that they are very durable, having been known to stand a working life as long as 16 years. Hitherto they have not found much favor in Scotch gas works, probably on account of the high quality gas usual in that country. With the advent of the incandescent gas burner, there is a tendency in favor of cheaper gas of lower candle power, and the probability seems to be that the Scotch gas managers, in the matter of vertical retorts, will soon make up for lost time.

Book Reviews.

"*The Gas, Petrol and Oil Engine*," Vol.II., by Dugald Clerk, D.Sc., F.R.S., M. Inst. C.E., and G. A. Burls, M. Inst. C.E. Published by John Wiley & Sons, New York; 838 pp.; new and revised edition, illustrated; price $7.50. Three years have been spent in preparing this volume, which gives comparisons of early and later construction, and discussions by the authors in the development of modern gas engine practice and design. It seems to be the "last word" on this subject, and should be of great value to inventors and students in this wide field.

"*Gas Power*," by C. F. Hirschfeld, M.M.E., and T. C. Ulbricht, M.M.E., published by John Wiley & Sons, New York; 209 pages; price $1.25.

This is one of "The Wiley Technical Series for Vocational and Industrial Schools," and treats the subject in a simple and non-mathematical manner. The diagrammatic illustrations and tables are particularly clear, and the descriptive matter is good, direct Engltsh. A very valuable book for those with only a limited technical education.

Recent Patent Issues.

Prepared for the AMERICAN GAS LIGHT JOURNAL by ROYAL E. BURNHAM, solicitor of patents and counselor in patent causes, 833 Bond Building, Washington, D. C., from whom illustrations and specifications of any patent mentioned below may be obtained for 20 cents.

1,056,001. Attachment for Gas Pipes, Burners, etc. B. L. Bond and G. V. Karlson, Philadelphia, Pa.

1,056,026. Means for Separating Mixed Gases. W. T. Hoofnagle, Glen Ridge, N. J.

1,056,045. Process of Manufacturing Gas. M. W. Murray, New York City, assignor of one-half to G. H. Rosenblatt, same place.

1,056,757. Gas Stove. R. Munro, Pittsburgh, Pa., assignor to Century Stove and Mfg. Co., Johnstown, Pa.

1,056,845. Process of Refining Natural Gas Gasoline. W. O. Snelling, Pittsburgh, Pa., assignor to American Gasol Co., same place.

1,056,887. Gas Controlling Device. J. J. Daley, Chicago, Ills.

1,057,181. Automatic Cut-Off for Gas Burners. Bernard Straub, New York city.

1,057,288. Gas Pressure Governor. A. J. Short, Birmingham, England.

1,057,289. Meter Box and Meter Connection. W. Sieber, Henderson, Ky., assignor of one-half to C. A. Hart, same place.

1,057,302. Gas Burner. L. F. Tooth, London, England.

1,057,312. Manufacture of Incandescent Mantles for Gas Lighting. A. H. Williams, Hyde Park, South Australia.

1,057,609. Protective Lock for Gas Pipes. T. H. Young, New York City.

1,057,613. Art of Separating Materials from Gases. W. J. Baldwin, Brooklyn, N. Y.

1,057,625. Automatic Gas Valve. C. R. Diehl, Jackson, Mich.

1,057,638. Automatic Lamp Lighter and Controller. W. C. Hamilton and W. L. Bird, Indianapolis, Ind.

1,057,767. Gas Analysing Apparatus and Process. H. C. Parker, Holyoke, Mass.

1,057,814. Gas Burner. C. H. Erickson, Denver, Col.

1,057,832. Gas Muffle. J. A. Herrick, New York City.

1,057,833. Gas Valve. J. A. Herrick, New York City.

1,057,836. Gas Stove. C. B. Holden, Milwaukee, Wis.

1,057,890. Connecting Bar or Hanger. F. W. Simmons, Atlantic City, N. J.

1,057,943. Incandescent Gas Light Burner. G. Dalen, Stockholm, Sweden.

1,058,007. Gas Burner. W. R. Smith, Buffalo, N. Y., assignor to Buffalo Leather Company, same place.

1,058,016. Automatic Gas Valve. W. O. Garber, South Richmond, Va.

1,058,102. Gas Regulator. J. R. Ricketts, Los Angeles, Cal., assignor to Perfection Gas Regulator Company, same place.

1,058,104. Gas Burner. J. M. Robinson, Buffalo, N. Y.

1,058,125. Gas Burner. J. L. Williams, Philadelphia, Pa.

1,058,190. Convertible Gas and Hot Flue Water Heater. C. A. McGinnis, Cleveland, O.

1,058,334. Gas Regulator. J. R. Ricketts, Los Angeles, Cal., assignor to Perfection Gas Regulator Company, same place.

1,058,335. Gas Regulator. J. R. Ricketts, Los Angeles, Cal., assignor to Perfection Gas Regulator Company, same place.

1,058,377. Guard for Inverted Incandescent Mantles T. J. Litle, Jr., Woodbury, N. J., assignor to Welsbach Light Company, Gloucester, N. J.

1,058,378. Guard for Inverted Incandescent Mantles. T. J. Litle, Jr., Woodbury, N.J., assignor to Welsbach Light Company, Gloucester, N. J.

1,058,428. Apparatus for Generating Gas. C. L. Heath, Washington, D. C.

1,058,483. Gas Calorimeter. F. A. Stamps, Niagara Falls, N. Y.

1,058,660. Apparatus for Making Combustible Gas Out of Petroleum. J. T. Davis, Alameda, Cal., assignor to Technical Development Company, San Francisco, Cal.

Items of Interest
FROM VARIOUS LOCALITIES.

GOVERNOR FOSS has declined to endorse the bill permitting the Cambridge (Mass.) Gas Light Company to generate and distribute for sale steam and other forces for power and other lawful uses. Abstracting the veto message the Governor declares this measure would give an extension of corporate rights, powers and privileges of far-reaching character. It authorizes the corporation to construct conduits or other means of transmission necessary through streets and wherever required; but proposes no regulation over these new classes of service other than existing laws relative to electric light companies within customary field of service. This measure illustrates the present tendency to confer extremely valuable additional rights on existing companies, and thus in effect reconstruct them under a far more valuable franchise than they originally held, but without equivalent return to the public. Legislation of this sort is objectionable and dangerous. The bill also shows the great importance of providing immediately, without equivocation, for the more effective public regulation of public service corporations before bestowing additional legislative benefits on any such existing corporations.

THE village of Elmsford, N. Y., and the intervening territory between that place and Tarrytown, on the north, will be given a gas supply this season by the Westchester Lighting Company. We also understand that the named Corporation, after a thorough investigation in the premises, has decided to enlarge the gas works at Tarrytown for the better supply of the district between Elmsford on the West and White Plains on the East.

MR. E. W. MOORE and associates have sold the Sandusky (O.) Gas and Electric Company, which latter concern is controlled by Messrs. W. S. Barstow & Co. The property now is in the hands that in 1912 purchased the Toledo, Port Clinton and Lakeside Traction properties.

MR. THOMAS G. HENDERSON, formerly with the Pawtucket (R. I.) Gas Company, has been appointed on the selling force of the North Adams (Mass.) Gas Light Company.

WE are informed that the California State Commission has authorized the Los Angeles Gas and Electric Corporation to purchase the Valley Gas and Fuel Company and the California Coke and Gas Company, of Pasadena, and to issue $900,000 of bonds, the proceeds to be used for the acquisition of the two Companies in Pasadena, and for these improvements to and extensions in the existing plant: Additional gas generating apparatus, $169,000; extension of gas distributing system, $600,000; extension of electric distributing lines, $280,000.

AT the annual meeting of the Pacific Gas and Electric Company, San Francisco, Cal., the former Directors and other executive officers were re-elected. The shareholders also ratified the proposed issue of $5,000,000 debentures, bearing 6 per cent. interest, the same to be offered *pro rata* to shareholders of record. The proceeds of the issue are to be used in construction work.

MR. GEORGE W. BRIGGS, Superintendent gas division, Northern Indiana Gas and Electric Company, has resigned, to become effective the 1st proximo.

THE Massachusetts Legislature has assented to the measure under which the capital stock of the Woburn Gas Light Company is "established" at $45,100. The measure also validates the existing share issue.

"ON the 16th inst. three score or more of the officials of the Boston Consolidated Gas Company attended a session in Young's Hotel. After an excellent dinner, the business meeting was begun, and the subject for discussion—'Oil; Boiler Compounds and Packing'—ably presented by the Purchasing Agent, Mr. Albert Dunbar, engaged the party in an animated discussion. That I'm not exaggerating in this respect seems absolutely certain when I note that these gentlemen took part therein: Vice-President, W. A. Wood—whose popularity amongst the rank-and-file spreads constantly; Dr. J. F. Wing, W. A. Learned, N. W. Gifford, B. A. Allen. H. Fisher, W. B. Nichols, J. N. Spear, F. N. Goodwin and W. H. Edmundson. The Committee in direction was thus composed: Messrs. H. N. Cheney, Chas. Skentelbery and A. B. Way.—R. V."

THE Master Plumbers and Gas Fitters, of Boston, seem generally to favor the measure, in the shape of an ordinance proposed by Mr. John Deshon, a prominent officer in the aforesaid Society, and which is now before the Municipal Council. This ordinance proposes to make it obligatory to have all firms engaged in gas fitting, and their journeymen as well, licensed. Further, that the office of Gas Inspector be created. One of the most prominent master plumbers of the city, when asked for his opinion respecting the tentative "ordinance," said: "The proposed gas ordinance for regulating the installation of gas pipes in dwellings or structures of all sorts is a positive move in the right direction. Where gas pipe is put in with no supervision or inspection, the tendency is to cut the job, not using the proper fittings, branches, etc., and not giving the proper air or mercury test. I have a case in mind where the gas had to be shut off from a 6 tenement block at night, the odor of escaping gas being so strong that the tenants on one floor were compelled to wait an hour before the air in the rooms was clear of gas odor. The leak was caused by a sandhole in a tee fitting on the main line to the second flat. The gas fitter who put in the pipe must have known that the tee-fitting was imperfect, for when the hardwood floors and wall of two rooms had been cut into, the imperfect tee-fitting was found with a piece of sealing wax plastered over a sand hole."

THE gas rate in Keokuk, Ia., has been reduced to $1.25 per 1,000 cubic feet, net; further, it is agreed that a minimum charge of 50 cents may be made for each meter in use.

GENERAL MANAGER H. W. PECK, of the Mohawk Gas Company, Schenectady, N. Y., has awarded the contracts for the enlargement of the Corporation's plant on Villa Road. The main items in the premises were thus disposed of: A steel storage holder, of 2 millions cubic feet capacity, to the Bartlett Hayward Company, of Baltimore; and a generator and building equipment to the Isbell-Porter Company, Newark, N. J. The plant will be of the coal gas type.

MR. HARRY SIMMONS, SR., Treasurer of the Rahway (N. J.) Gas Light Company, died at his home, No. 123 Irving street, at noon of the 15th inst. He was in his 72d year, and had been prominent in the business, social and religious circles of Rahway for many years. He is survived by his widow, 2 sons and a daughter.

LAST Saturday the Citizen Gas and Electric Company moved into its commodious and beautiful new office home, which structure is located on Commercial street and Park avenue. The building is really a credit to the Company, and affords substantial evidence of the smart business growth of tidy Waterloo, Ia.

THE Detroit *News*, of recent date, had this to say: "The first large building in this city to be heated by gas is being erected by the Detroit Gas Company, at the junction of Fourth and Locust streets. It is a 3-story, fire-proof, reinforced concrete structure and will be used as a service station, garage, repair shop and warehouse for gas appliances. The building will be altogether a 'Gas Building,' in that all of its mechanical equipment will consist of gas appliances. It will be heated and lighted by gas; water will be heated by a mammoth instantaneous automatic heater, and the repair shop will be equipped with the latest gas, heat-treating facilities. The building was designed and is being erected by the W. E. Wood Company, for the account of the Gas Company."

"S. S.," writing from Burlington, Vt., under date of the 21st inst., says: "On the evening of the 15th inst. the members of the Lynn (Mass.) Gas and Electric Company's Employees' Association met in their new and well-appointed Club Rooms. The particular feature of the evening was 'Charlie' Blood and his moving picture display (reel-after-reel), depicting the usefulness of the Humphrey arc lamp, as the lecturer declared, 'from start to finish.' The installations shown were so realistic and potent as to warrant the enthusiastic plaudits of the spectators, and Mr. Blood was voted hearty thanks for the instructive entertainment. Indeed, the session was a most enjoyable one. And here's success to the Lynn Gas Club and its hustling members."

THE Charlotte (N. C.) Gas and Electric Company has awarded a contract to the Gas Machinery Company, Cleveland, O., for a new coal gas plant, the main features of which are: Four benches to be fitted with 6 inclined retorts of silica material, complete, with all the iron work, hydraulic mains, charging and flushing apparatus, retort house, governor, exhausting, condensing, washing and scrubbing machinery, coal and coke handling apparatus, and concentrator for the recovery of volatile and fixed ammonia. This will afford the Charlotte Company a complete, new coal gas equipment in addition to and as a standby of its present modern water gas apparatus.

DURING the year 1912 the Pacific Gas and Electric Company, San Francisco, which operates 17 different gas plants, sold 6,691,072,400 cubic feet of gas to 196,133 consumers.

THE proprietors of the Binghamton (N. Y.) Gas Company, replying to the request of City Council that the selling rate be reduced to $1 per 1,000 cubic feet, have made reply that it is impossible to comply with the request, in that it would be impossible to maintain the present high standard of efficiency at a rate lower than the current one. It is further stated that, July 1, 1911, the price was put at $1.10 per 1,000, and that since then the cost of production and labor had materially increased.

"THE proprietors of the Rome (N. Y.) Gas, Electric Light and Power Company have at last determined to put the gas plant division of its properties in such order that a better supply will be vouchsafed those who dwell in the outer sections of that city. Superintendent A. B. Morton kept at them until the desired consent and necessary appropriation were granted him. It is arranged that a 16-inch cast main will lead from the South Madison street plant to West Park street, and from there leading into a 12-inch to Spring street. A second 10-inch will be run in Jay street, from Park to Thomas, and below the Canal 10-inch mains will go in from Adams to John, from Madison to James, and from Front to Canal street, passing under the tracks of the N. Y. Central Railroad. Of course, this involves a tieing up into the smaller mains that will keep Brother Morton in a perplexed state of mind for many days (and nights); but that hustling gentleman will be more than satisfied if at the end of it all his customers are satisfied, if not contented. The work, too, will involve an expenditure of not far from $25,000.—M. V. T."

MR. E. A. SPEER has been elected President of the Pen Argyl (Pa.) Gas Company.

COL. AND MRS. PAUL DOTY, of St. Paul, Minn., sailed for Europe from New York city some days ago, to be abroad 3 months or so.

"B. R. B.," writing from North Adams, Mass., under date of the 22d inst., says: "Mr. Thomas G. Henderson, who some time ago resigned a position, that he had occupied for years on the staff of the Arnold Print Works, to take a course of tuition in salesmanship in the Pawtucket (R. I.) Gas Company, has been appointed Salesman in the appliance division of the North Adams (Mass.) Gas Light Company. He succeeds Mr. G. L. Hayes, who was recently appointed Manager of the Greenfield (Mass.) Gas Light Company."

MR. HARBOUR, since 1911 in the service of the Worcester (Mass.) Gas Light Company, has been appointed Manager of the appliance division recently instituted by the Municipal Light Commissioners of Middleboro, Mass.

AT the annual meeting of the local managers of the plants controlled by the American Gas Company, recently held in the home headquarters in Philadelphia, two interesting papers were read, respectively, by Mr. Austin Burt and Mr. H. B. Maynard, of the Citizens Gas and Electric Company, of Waterloo, Ia. The former's subject was "The Unprofitable Gas Consumer;" the theme of the latter was, "Welfare Work among st Employees."

THE quarterly distribution of stock (period ending the 1st inst.) amongst its employees by the New Haven (Conn.) Gas Light Company, shows that the plan possesses all of its former vitality and usefulness. In this allotting the Company distributed 105 shares (valued at $41.50 per $25 par) of stock to 241 participating employees, who now hold 1,346 shares, valued at virtually $56,000.

THE Milwaukee (Wis.) Gas Company's modern, commodious and handsome Appliance Building, at Wisconsin and Jackson streets, was opened, with appropriate ceremonies, about a fortnight ago. Thousands of residents visited the place, which is, without a bit of exaggeration, one of the most attractive office structures in beautiful Milwaukee.

The Market for Gas Securities.

There isn't any market for city gas securities; that is the real situation. And prices or quotations would be much lower were it not for the fact that, in the past 3 years, those who sold Consolidated short below 130 got it where covering was painful. The signs in the money market are plainly showing that "hoarding" of cash is being done on a very large scale. What with the wars and rumors of war, the traiff tinkerers, and other oddities, the trouble is maiuly lack of confidence. Nevertheless, the real situation in respect of Consolidated has every warrant for much higher prices. The business of the huge, well-managed corporation never was better. The opening quotation to-day (Friday) came in at 131 to 132. A customer of ours offers 40 shares Bronx (N. Y.) Gas and Electric at par.

Brooklyn Union is nominally 127 to 133, and as it is with Consolidated, so it is with this sterling security. The peculiar market condition is responsible for this ridiculously low quotation. The feature of the market was the break in Laclede common to-day, which at noon sold off to 96¼, two points under last night's close, and the lowest price in 3 years or so. The position of this Company never was better, and it is now negotiating to build a modern plant that will serve it for 25 years to come. Recent dividends are: Portland (Ore.), preferred 1¼ per cent., payable May 1st; Fall River, Mass., $3 per share, payable May 1st; Peoples, Chicago, 1¼, payable May 26; Massachusetts Gas, 2, semi-annual, preferred, payable May 31st; Fort Worth (Tex.) Light and Power, preferred, 1¼, payable May 1st; Pacific Gas and Electric, preferred, quarterly, 1¼, May 15th.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

115 BROADWAY, NEW YORK CITY.

APRIL 28.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par value of $100 per share:

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked*
Consolidated Gas Co.	199,816,500	100	131	132
Central Union Gas Co. — 1st 5's, due 1927, J. & J.	8 5 0,000	1,000	103	105
Equitable Gas Light Co.— Con. 5's, due 1932, M. & S.	1,000,000	1,000	105	106
Mutual Gas Co.	3,500,000	100	173	177
Detroit City Gas Co.	6,580,000	—	—	50
Detroit Gas Co., 5's	381,000	1,000	75	80
" Prior Lien 5's	5,619,000	1,000	97	100½
Equitable Gas & Fuel Co., Chicago, Bonds	2,000,000	1,000	—	101
New Amsterdam Gas Co.— 1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	101	102½
New York & Richmond Gas Co. (Staten Island)	1,500,000	100	59	63
1st Mtg. Gold Bds. 5 p. ct.	1,500,000	—	98½	100½
New York and East River — 1st 5's, due 1944, J. & J.	3,500,000	1,000	103	105
Con. 5's, due 1945, J. & J.	1,500,000	—	96	100
Northern Union— 1st 5's, due 1927, J. & J.	1,250,000	1,000	99½	101
Standard	5,000,000	100	60	70
Preferred	5,000,000	100	90	100
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	103	105
The Brooklyn Union	15,000,000	1,000	127	133
1st Con. 5's, due 1948, M. & N.	15,000,000	—	105¾	107
Yonkers	399,650	509	130	—
Out-of-Town Companies.				
Bay State	50,000,000	50	¾	3.16
" Income Bonds	2,000,000	1,000	-	.5
Binghampton Gas Works	450,000	100	—	—
" 1st Mtg. 5's	509,000	1,000	97	100
Boston United Gas Co.— 1st Series S. F. Trust	7,000,000	1,000	82	86
2d " " "	3,000,000	1,000	47½	50
Essex and Hudson Gas Co.	6,500,000	—	133	136
Fort Wayne	2,000,000	—	—	-
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Light Co., 1st Mtg. 5's	1,350,000	1,000	100	101
Hartford	750,000	25	190	200
Hudson County Gas Co., of New Jersey	10,500,000	—	130	133
" Bonds, 5's	10,500,000	—	101	106
Indianapolis	2,000,000	—	38	45
" Bonds, 5's	2,650,000	—	104½	105
Jackson Gas Co.	250,000	50	82	—
" 1st Mtg. 5's	290,000	1,000	91	
Kansas City Gas Light Co., of Missouri	5,000,000	100	—	86
Bonds, 1st 5's	3,822,000	1,000	98½	99
Laclede Gas Co., St. Louis.	10,000,000	100	96	96⅛
Preferred	2,500,000	100	99	102
Bonds	10,000,000	1,000	102⅜	103
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,570,000	50	120	170
Madison Gas and Electric Co. " 1st Mtg. 6's	400,000	1,000	108	
Massachusetts Gas Companies, of Boston	25,000,000	100	87½	88
Preferred	25,000,000	100	91	92
Montreal L. H.& P., Canada	9,000,000	100	235½	236
Nashville Gas Light Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	97	98
Bonds, 6's	6,000,000	—	127	128
New Haven Gas Co.	5,000,000	25	182	190
Peoples Gas Lt. & Coke Co., Chicago	25,000,000	100	111	113
1st Mortgage	20,100,000	1,000	102	102½
2d "	2,500,000	1,000	104	—
Rochester Gas & Electric Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104¾	105½
Pacific Gas and Electric Co.	15,500,000	—	55	58
St. Joseph Gas Co.— 1st Mtg. 5's	1,000,000	1,000	96	98
St. Paul Gas Light Co.	2,500,000	100	—	—
1st Mortgages, 6's	650,000	1,000	104	10-
Extension, 6's	600,000	1,000	112⅓	115
General Mortgage, 5's	3,447,000	1,000	94	96
Syracuse Gas Co., N. Y.	1,975,000	100	50	55
Bonds	2,047,000	1,000	101	103
Washington (D. C.) Gas Co.	1,800,000	200	422½	425
1st Mortgage, 6's	600,000	—	—	-
Western Gas Co., Milwaukee	4,000,000	—	—	—
Wilmington (Del.) Gas Co.	600,000	50	—	—

MEETING TIMES OF THE VARIOUS GAS ASSOCIATIONS.

American Gas Institute.—Annual meeting, Richmond, Va., October 15-17, 1913. Officers: President, W. R. Addicks, New York City. Secretary, Geo. G. Ramsdell, 29 West 39th st., N. Y. City.

Canadian Gas Association.—Annual meeting Sept. 1913. Officers: President, Arthur Hewitt, Toronto, Ont.; Secretary and Treasurer, John Keilior, Hamilton, Ont.

Empire State Gas and Electric Association.—Annual meeting, New York City, Oct. 8, 1913. Officers: President, C. G. M. Thomas, Long Island City, N. Y.; Secretary, C. H. B. Chapin, 39 W. 39th street. New York City.

Gas Meters.—Monthly Section Meetings; Grand Commissioner, I. W. Peffly, New York; Gen'l Sec'y, H. Thurston Owens, La Crosse, Wis.; New York Section, Chairman, Will W. Barnes; Secretary, John M. Brock, 204 Percy street, Flushing, N. Y. Philadelphia Section; Chairman, L. R. Dutton; Secretary, H. F. Patterson, Jr., 831 Chestnut street. Cleveland Section, Chairman, F. R. Hutchinson; Secretary, Wm. Holtz, East Ohio Gas Co. New England Section, Chairman, F. M. Roberts, Haverhill; Sec., F. K. Wells, 60 Broad street, Boston. Winona Section, Winona, Minn., W. F. Clausen, Chairman.

Guild of Gas Managers of New England.—Annual meeting, March, 1913. Young's Hotel, Boston; monthly meeting, second Saturday. Officers: President, Walter G. Africa, Manchester, N. H.; Secretary, H. K. Morrison, Brockton, Mass.

Illinois Gas Association.—Annual meeting, March 18th and 19th, 1914. Chicago, Ills. Officers: President, W. F. Barrett, Chicago, Ills.; Secretary-Treasurer, Horace H. Clark, 115 No. Oak Park avenue, Oak Park, Ills.

Illuminating Engineering Society.—Annual meeting,———— September, 1913. Meetings of Sections, monthly. Pres., Preston S. Millar; General Secretary, J. D. Israel, 29 W. 39th street, New York City. Sections: New York, Secretary, C. L. Law, 124 West 42d street. New England, Secretary, H. C. Jones, 10 High street, Boston, Mass. Philadelphia, Secretary, L. B. Eichengreen, Broad and Arch streets. Chicago, Secretary, J. B. Jackson, 28 North Market street. Pittsburgh, Secretary, J. C. Mundo, Oliver Building.

Indiana Gas Association.—Annual meeting, March —— —— 1914. Terre Haute. Officers: President, A. S. Cooke, Terre Haute; Vice-President, A. C. Blinn, Evansville; Secretary-Treasurer, Philmer Eves, Indianapolis.

Iowa District Gas Association.—Annual meeting, May 7, 8, 9, 1913; Burlington, Ia. Officers: President, C. W. Fair, Atlantic, Ia.; Secretary, G. I. Vincent, Des Moines, Ia.

Kansas Gas, Water and Electric Light Association.—Annual meeting, October—— 1913. ———— Officers: President, L. O. Ripley, Emporia, Kas.; Secretary and Treasurer, W. H. Fellows, Leavenworth, Kas.

Michigan Gas Association.—Annual meeting, September, 17, 18, 19, 1913; ———— Officers: President, W. S. Blauvelt, Detroit, Mich; Secretary-Treasurer, Glenn R. Chamberlain, Grand Rapids, Mich.

Missouri Electric Light, Gas, Water Works and Street Railway Association.—Annual meeting, April, 1913; Mexico, Mo. Officers: President, P. A. Bertrand, Joplin, Mo.; Secretary and Treasurer, P. W. Markham, Brookfield, Mo.

National Commercial Gas Association.—Annual meeting and gas show, Dec. 1-6, 1913 Philadelphia, Pa. Officers: President, C. W. Hare, Philadelphia Pa.; Secretary, Louis Stotz, 29 West 39th street, New York City.

Natural Gas Association.—Annual meeting, Cleveland, O., May 20-22, 1913; Officers: President, M. B. Daly, Cleveland, O; Secretary, T. C. Jones, Delaware, O.

New England Gas Association.—Annual meeting, February, 18th and 19th, 1914 Boston. Officers: President, T. H. Hintze, Providence, R. I.; Secretary-Treasurer, N. W. Gifford, East Boston, Mass.

New Jersey State Gas Association.—Annual Meeting, July —, 1913, Asbury Park N.J. President, C. F. Butcher, Freehold, N. J.; Sec'y-Treasurer, O. F. Potter, Newark, N. J.

Ohio Gas Association.—Annual meeting, February ———, 1913, Columbus, O.; President, John M. Garard, Columbus, O.; Secretary, L. B. Denning, Columbus, O.

Oklahoma Gas, Electric and Railway Association.—Annual meeting, Oklahoma City May, ——1913. President, F. W. Caldwell, Shawnee, Okla.; Secretary, H. V. Bozell, Norman, Okla.

Pacific Coast Gas Association.—Annual meeting, San Jose, Cal., September 16, 17, 18, 1913. Officers: President, Henry E. Adams, Stockton, Cal.; Secretary-Treasurer, Henry B stwick, 445 Sutter street, San Francisco, Cal.

Pennsylvania Gas Association.—Annual meeting, Allentown, Pa., April ———, 1914; Officers, President, J. A. Frick, Allentown, Pa.; Secretary-Treasurer, W. O. Lamson, Jr., West Chester, Pa.

Society of Gas Lighting.—Annual meeting Dec., 11, 1913; monthly meetings, second Thursday. Place, New York City. Officers: President, Fred. S. Benson; Secretary, George G. Ramsdell, 29 West 39th street, New York city

Southern Gas Association.—Annual meeting, Mobile, Ala., April 4, 1914, Officers: President, James Ferrier, Rome, Ga.; Secretary-Treasurer, E. D. Brewer, Atlanta, Ga.

Southwestern Electrical and Gas Association.—Annual meeting, May 21, 22, 23 and 24, 1913, Galveston, Tex. Officers: President, F. M. Lege, Jr., Galveston, Tex.; Secretary H. S. Cooper, 405 Slaughter Bldg., Dallas, Tex.

Wisconsin Gas Association.—Annual meeting, May 14 and 15, 1913, Milwaukee, Wis. Officers: President, I. F. Wortendyke, Janesville, Wis.; Secretary-Treasurer, Henry Harmon, Milwaukee, Wis.